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ABSTRACT

This monograph discusses the learning style model for counseling college students. The targeted audience includes college counselors and counselor educators. Six objectives are noted: (1) to increase counselor effectiveness through individual learning style identification and prescription; (2) to provide counselors with a model for matching counseling techniques with learning style preferences of students; (3) to provide counselor educators with a model for looking at individual differences from a learning style perspective; (4) to identify counseling strategies that complement specific learning style elements; (5) to summarize research related to learning styles; and (6) to enable counselors to be consultants with teachers and instructors in providing a more effective learning environment. The document includes sections on increasing counselor effectiveness through learning style identification, using learning styles in counseling, counseling interventions based on learning styles, and research on counseling and learning styles. An extensive bibliography is included. (ABL)

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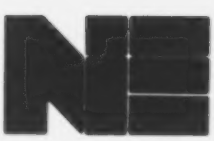

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* * * * * * * *

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ABSTRACT

Counseling for individual learning styles provides a model for integrating existing theory. The model begins with an assessment of individual needs and identifies a variety of counseling approaches that are compatible with those individual learning style preferences. It is a valuable tool for selecting appropriate counseling interventions and recognizes the validity of the vast array of counseling theories, but maintains that no single approach can meet the needs of all counselees. The fundamental thrust of counseling for individual learning styles is eclectic: it provides a strong rationale for selecting counseling approaches which will enhance counselee learning and growth. Therefore, the learning style model needs to be introduced to graduate counselor education students and practicing counselors after they are thoroughly knowledgeable concerning existing theories, techniques, and the basic tenets of counseling and human development.

PREFACE

Counseling, by its very nature, emphasizes individual differences, and as counselors we are becoming increasingly aware of these differences in the varieties of individual learning styles. When people learn, they not only perceive and think, but also interact with resources, methods and environments. The tendencies and preferences that develop from these experiences constitute one's learning style--one's characteristic way of processing information, feeling and behaving in learning and counseling situations.

There are two basic dimensions of the counseling situation--one is the internal, subjective aspect, and the other is the external, objective or tangible aspect. Internal or subjective dimensions refer to such areas as trust and the counseling relationship, while the external or objective dimensions refer to the particular strategies that one uses to achieve change through counseling and goal setting. Learning style elements relate to both internal and external aspects--e.g., to helping a client understand the nature of how they experience authority figures, as well as how they are affected by such environmental elements as sound and light requirements.

Counseling through individual learning styles provides a model for integrating existing theory, by beginning with an assessment of learning style and identifying a variety of counseling approaches that are compatible with the individual learning style preferences. The fundamental thrust of counseling for learning styles is eclectic: it provides a rationale for selecting counseling interventions which will enhance client learning and growth.

The major purpose of this monograph is to provide college counselors and counselor educators with information on learning styles to enable them to assess the learning style of each student, and to apply the learning style model in their counseling interventions. In addition, the monograph will help them serve as consultants and resources for their counselees and for faculty in order to provide an improved environment for learning. The objectives include the following:

1. To increase counselor effectiveness through individual learning style identification and prescription.

2. To provide counselors with a model for matching counseling techniques with learning style preferences of students.
3. To provide counselor educators with a model for looking at individual differences from a learning style perspective.
4. To identify counseling strategies that complement specific learning style elements.
5. To summarize research related to learning styles, which in turn suggests areas for additional research.
6. To enable counselors to be consultants with teachers and instructors in providing a more effective learning environment.

A special thank you is due Rita and Kenneth Dunn for their pioneering work in developing the Learning Style Model. We are most grateful to Ronda Consolver, Claire Caramore, and Pat Johnston who typed the manuscript. Finally, we are especially appreciative of the excellent editorial help we received from Debbie Herbert.

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CHAPTER I

INCREASING COUNSELOR EFFECTIVENESS THROUGH LEARNING STYLE IDENTIFICATION

Challenge to Counselors

Colleges and universities, regardless of institutional type or size, are facing major fiscal problems in the decade ahead (Barr & Keating, 1985). A combination of forces contributes to the fiscal crisis, including declining enrollments in many institutions, increased operating costs, the need to provide technological support to enhance learning, and decreased state and federal support to students and institutions. Gallagher and Demos (1983) point out that college administrators and faculty have traditionally had the greatest power and status and that budget cuts are not as likely to come in those areas as they are in counseling and other student personnel service areas. The implications of this condition are clear: counseling centers need to strengthen their position through accountability data and increased political involvement in the system.

Lombardi (1974) surveyed 128 counseling centers and found that many of these centers were hampered in their attempts to move toward a more preventive emphasis. More recently, some college counseling centers have responded to the fiscal crisis by attempting to broaden their services and develop student outreach programs, thus moving to a more preventive approach to addressing student needs. However, caseloads for college counselors are frequently computed by a fixed ratio (e.g., one counselor to 1,100 students in California state colleges and universities), and attempts to broaden services are frequently unsuccessful because self-referred counselees have first priority.

In addition to addressing the needs of the traditional college student or late adolescent, college counselors are confronted with accommodating the non-traditional student. Cross (1971) describes these students, including ethnic minorities and mid-life females, as those who experience difficulty with mainstreaming because their values are atypical of the achievement orientation patterns in higher education. Cross also asserts that the refusal of universities to customize

programs and services to these populations has resulted in a wave of alternative education provided in business and industry and non-traditional educational institutions. Therefore, determining the needs of an increasingly diverse college population implies that college counselors should conduct needs assessment with all students.

Another factor in the diversity of the college population is that approximately 55 percent of today's high school graduates are continuing in higher education. Selected public colleges and universities have instituted "an open enrollment policy" that insures admission of high school graduates in the higher education system. High school graduates no longer have uniform academic backgrounds, evidenced in the college preparatory curriculum of a generation ago, because high schools provide a more diversified curriculum allowing for more elective courses. Hence, there are larger numbers of "marginal" students, who need intensive counseling and remedial work in fundamental skill areas, such as reading, writing, speaking, and mathematics. These students are more likely to succeed in their efforts if they are knowledgeable about their learning style requirements and if instructors apply learning style principles within developmental skills training programs.

Cutting across the categories described above are the tasks and crises of young adult development. It is a period of stress and turmoil when the individual is torn between a need to be a conformist and behave and think like peers, and an equally strong need to develop individuality and uniqueness. Negative resolution of these issues can result in alienation, loneliness and isolation. Coming of age in a nuclear and highly technological world, filled with international tensions and rapid changes, often makes developmental issues even more difficult to resolve.

The challenge for the college counselor, therefore, is to respond to the crises of young adulthood, while concurrently implementing a developmental-preventative program that is responsible to the psychosocial needs of the group-at-large. Colleges and universities are frequently large, formal institutions, which students can perceive as cold, uncaring, and alienating. In addition to developing and implementing a comprehensive counseling program, the counselor has a major role in consulting with administrators and instructors to facilitate the establishment of a humanistic environment, which is responsive to individual student needs and learning style differences.

Current Approaches in College Counseling Centers

The college counseling center is staffed typically with (a) the Director of Counseling, who has the major responsibility for program planning, implementation, and evaluation; (b) a core of counselors, who generally have doctorates in counselor education or counseling psychology and who may be generalists, dealing with all types of student problems, or specialists, dealing exclusively with students' educational, vocational, personal, or social concerns; (c) psychometricians, who administer and interpret diagnostic and assessment systems; (d) a psychiatrist, who consults with the counseling staff and diagnoses students with pathological symptoms; (e) placement counselors, who work with employers and prospective graduates on job placement; and (f) counselor interns and/or Master's level counselors, who work under the supervision of professional counselors in such areas as individual and group counseling, testing, and conducting workshops.

The theoretical orientation of the counseling staff is typically varied, representing behavioral, psychoanalytic, Adlerian, reality, person-centered, Gestalt, cognitive, and existential approaches. In fact, a recent count by Parloff (1980) revealed that there are over 250 conceptually distinct approaches in counseling, all vying for distinction as the most effective method. These theories differ in terms of philosophy, major personality constructs, counseling goals, the relative importance of diagnosis, counseling techniques and strategies, and targeted clientele. Beutler (1983) asserts that what is needed is a theoretical system that is sufficiently broad to encompass both the non-specific and unique variables inherent in numerous theories and yet specific enough to insure that these procedures can be applied in a reliable and maximally successful way. Hence, he argues for systematic eclecticism in counseling.

In a recent review of the trends in counseling and psychotherapy, Smith (1982) surveyed a representative group of practitioners to ascertain their theoretical orientations. Over 40 percent of these practitioners identified their orientation as eclectic. Similarly, Hollis and Wantz (1984) surveyed counselor preparation institutions in the United States and found that approximately one-fourth identified the philosophic orientation of their programs as eclectic.

Thus, college counselors are exposed to a variety of theories, but there seems to be a trend toward systematic eclecticism in counseling, because it serves to

integrate existing theory and provide a framework for working with individual differences.

Counseling for individual learning styles supports this trend because it is an eclectic approach that involves (1) assessing individual learning style preferences, and (2) prescribing and utilizing counseling techniques which are compatible with these preferences. The learning style emphasis causes us to ask such questions as: In what particularly unique way does each individual prefer to learn and how can counselors and/or teachers present materials so they can be most easily mastered by the student? Some students, for example, need highly structured assignments and aural instruction and do not require mobility. Other students do their best if they work out their own structure once the assignment objectives are known, and if they can learn tactually or kinesthetically and move around as needed. Most college classrooms, however, use a single style--professor-oriented learning through lecture. While many students are bright and flexible enough to adapt to this style, there are many who are not able to adapt and become the college dropout or stopout.

An expanding core of research demonstrates the importance of accommodating individual learning preferences within the learning process. Smith (1982), for example, has clearly demonstrated the usefulness of learning style diagnosis for higher and continuing education. Studies at the community college level indicate that if learning style preferences are accommodated through complementary instructional approaches or skills training, there is significant improvement in academic achievement, student attitudes, and retention in college.

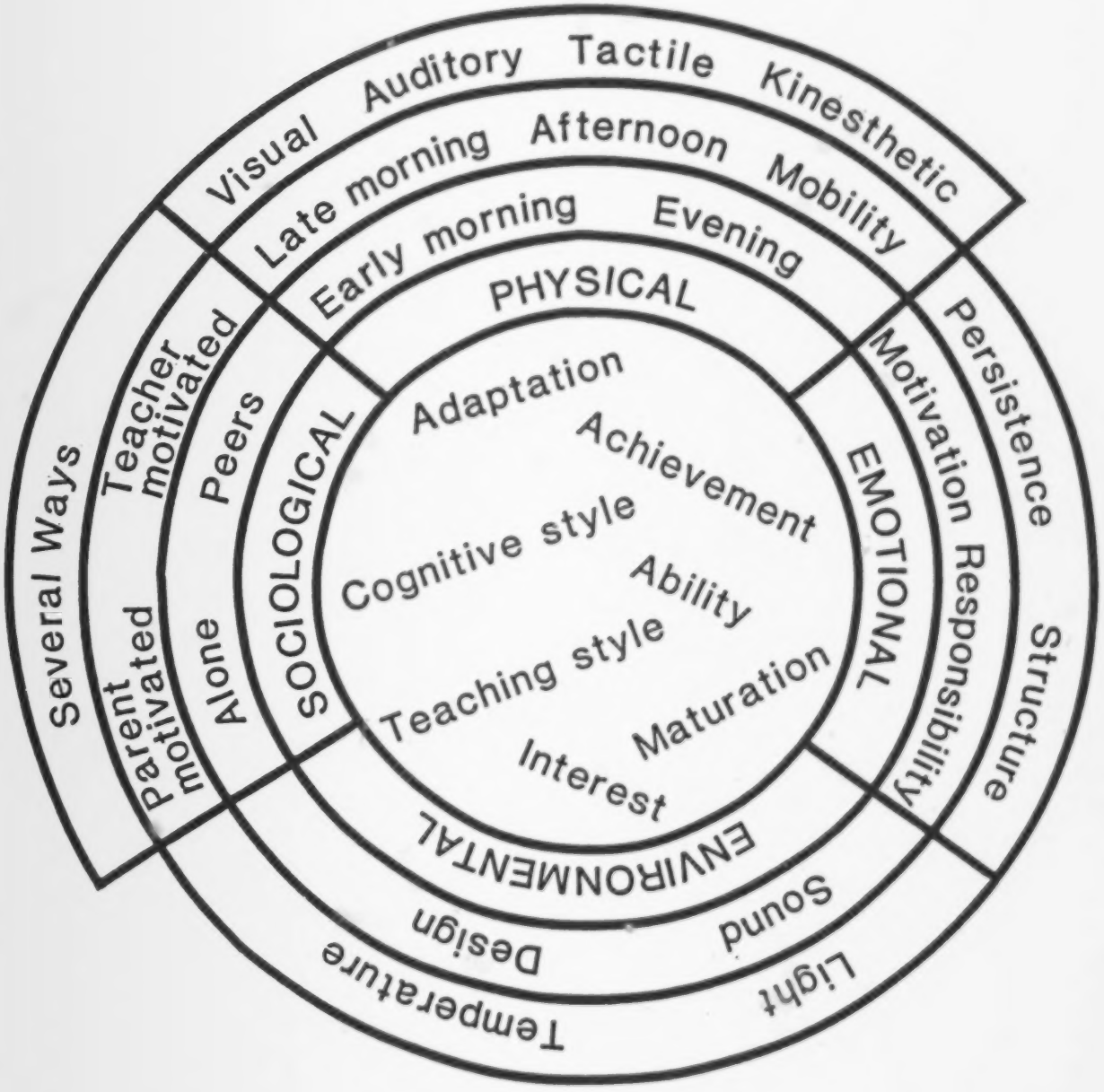
Learning Style Model

The learning styles approach emphasizes areas in addition to interest, achievement and ability that need to be taken into account in order to understand how instruction and learning occur for both teachers and students. There is strong research evidence to suggest that an individual's ability to perform at an optimum level is directly related to a number of variables in the Learning Style Model (Table 1). Research has found, for example, that truancy, behavioral acting out, and achievement are affected by variables from this model. Increasingly, it

Table I

Learning Style Model

(Based on the Learning Style Inventory by Dunn, Dunn and Price 1975)



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appears that many students who are not able to achieve or have been identified as learning disabled can achieve if they are taught through other learning style modalities.

The Learning Style Inventory (LSI) (Dunn, Dunn & Price, 1985) was the first comprehensive approach to the assessment of an individual's learning style. For use in grades three through 12, this instrument was an important and useful first step toward identifying the conditions under which an individual is most likely to learn, remember, and achieve. The Learning Style Model (Table 1) was developed from the LSI. On the basis of the same underlying factors and content analysis, the Productivity Environmental Preference Survey (PEPS) (Price, Dunn, & Dunn, 1982) was designed for adults.

The Learning Style Model (Table 1) depicts the elements of learning style in the outer rims of the circle and, in the center, the other elements with which learning style interacts. In other words, learning style elements interact with each other--e.g., mobility, structure, peer orientation, and auditory learning--and also with seven key areas. These areas are cognitive style, teaching style, maturation, adaptability, ability level, achievement level, and interest.

The LSI and PEPS instruments identify the elements that are critical to an individual student's learning style. The inventories do not measure underlying psychological factors, value systems, or the quality of attitudes, but the patterns through which learning occurs--i.e., the environmental, emotional, sociological, and physical preferences a student has for learning. Careful analysis of the data leads to prescribing the type of environment, instructional activities, social grouping(s), and motivating factors that maximize personal achievement.

An individual's learning style should not be confused with cognitive style, although the terms are sometimes used interchangeably. Learning style refers to how a person prefers to learn, while cognitive style refers to how the brain processes information. Cognitive style includes such variables as global/deductive processing vs. piece-by-piece/inductive processing. Since researchers do not always apply the labels uniformly, it is important that counselors determine how a definition is used in a particular case in order to ensure that the phenomena being described are clearly understood (see also the discussion of personality type and learning styles in Chapter III).

The PEPS instrument surveys individual learning style preferences in each of twenty different areas. It is a comprehensive approach to the identification of how adults prefer to function, learn, concentrate, and perform during educational or work activities in the following areas: (a) environment (sound, temperature, light, and design); (b) emotionality (motivation, responsibility, persistence, and the need for either structure or flexibility); (c) sociological preferences (learning alone, with peers, with authority figures and/or in several ways); and (d) physical needs (perceptual preference(s), time of day, intake, and mobility). The twenty areas can be described as follows:

Environmental

1. Noise Level--quiet or sound. Some people need quiet when they are learning, while others notice neither noise nor movement once they begin to concentrate; they can "block out" sound. Some people need sound; they invariably turn on a radio, stereo, or television whenever they study as a screen against random noise distractions.
2. Light--low or bright. Some people work best under very bright light, whereas others need dim or low light.
3. Temperature--cool or warm. Many students "can't think" when they feel hot, and others can't when they feel cold; some concentrate better in either a warm or cool environment.
4. Design--informal or formal. Many students think best in a formal environment, seated on wooden, steel, or plastic chairs like those found in conventional classrooms, a library, or a kitchen. However, some learn better in an informal environment, on a lounge chair, a bed, the floor, on pillows, or on carpeting.

Emotional

5. Unmotivated/Motivated. Motivation is the desire to achieve academically.
6. Non-persistent/Persistent. This element involves a person's inclination either to complete tasks that are begun or to take intermittent breaks and return to assignments or learning activities later.
7. Irresponsible/Responsible. This element involves students' desire to do what they think they ought to do. In schools, responsibility often is related to conformity or following through on what an instructor asks students to do.

8. Structure--needs or does not need structure. This element involves a student's need for specific directions or explanations prior to undertaking or completing an assignment.

Sociological

9. Learning Alone/Peer-oriented Learner. Some individuals prefer to study by themselves, while others prefer to learn with a friend or colleague. In the latter situation, discussion and interaction facilitate learning. Sometimes students prefer to study alone but in close proximity to someone.
10. Authority Figures Present. Some people feel better or more comfortable when someone with authority or recognized special knowledge is present.
11. Learning in Several Ways. This element has alternate meanings. It suggests that the person may learn easily alone and also with other people present (peers, or with an authority figure, or in any combination), or that the person needs variety as opposed to routine.

Physical

12. Auditory Preferences. This perceptual area describes people who can learn best when initially listening to a verbal instruction such as a lecture, discussion, or recording.
13. Visual Preferences. Learners whose primary perceptual preference is visual can recall what has been read or observed. When asked for information from printed or diagramatic material, they often can close their eyes and visually recall what they read or saw earlier.
14. Tactile Preferences. Students with tactile perceptual preferences need to underline as they read, take notes when they listen, and keep their hands busy, particularly if they also have low auditory preferences.
15. Kinesthetic Preferences. Learners with kinesthetic preferences require whole-body movement and/or real-life experiences to absorb and retain material to be learned. These people learn most easily when they are totally involved. Acting, puppetry, and drama are excellent examples of kinesthetic learning; others include building, designing, visiting, interviewing, and playing.
16. Requires Intake. This area describes students who often eat, drink, chew, or bite objects while concentrating, as opposed to those who prefer no intake until after they have finished studying.

17. Functions Best in Evening/Morning. These are two of the four "time of day preferences." Evening and morning are on a continuum; if a score falls below 40, the student tends to be an evening person; if the score is above 60, the student most prefers to learn in the morning.
18. Functions Best in Late Morning. The energy curve for these students is highest in the late morning, and they prefer to learn during this time of day.
19. Functions Best in Afternoon. The energy curve for these students is highest in the afternoon, and they prefer to learn during this time of day.
20. Mobility. How quietly can the person sit, and for how long? Some people need frequent breaks and must move about the instructional or work environment. Others can sit for hours while engaged in learning or working, particularly if they are interested in the task.

Interpretation of the learning style areas described above is based upon identifying preferences; that is, those elements in which the standard scores are below 40 (low preferences) or above 60 (high preferences). If scores are in the middle range (40-59) on most elements, there is no strong preference for the elements and accommodations do not have to be made in terms of the learning environment. Learning alone vs. peer-oriented and morning vs. evening are elements at opposite ends of a continuum. In these cases, scores below 40 indicate preferences for learning alone or in the evening; scores above 60 suggest peer-oriented or morning learners. Table 2 illustrates the interpretation of the learning style scales for counseling purposes. Twenty elements of learning styles are represented in the table, and the five sociological elements have been collapsed into three elements with alone and peer preferences represented on a continuum.

Table 2

Interpretation of the Learning Style Areas for Counselors

Elements	Score 20-29	Score 30-39	Score 40-59	Score 60-69	Score 70-80
Sound during Counseling	Always needs quiet when learning, doing homework. Use of silence in counseling facilitates understanding.	Usually needs quiet when learning. Needs time for reflection in counseling.	Depending on the learning task, may prefer quiet or the presence of sound.	Some kind of sound (radio, recordings) enhances the learning process. Low tolerance for silence during counseling.	Consistently works in the presence of sound. Use of background music during counseling is suggested.
Light during Counseling	Always needs very low light. Eyes are sensitive and tire easily with florescent lighting.	Usually needs dim light to learn.	No strong preference for either low or high light.	Light area enhances the learning process.	Needs bright light and seeks out rooms with lots of windows when studying.
Temperature while Learning/ Counseling	Prefers a cool room and may find it difficult to tolerate heat.	Usually seeks out a cool environment.	No strong preferences for temperature extremes.	Usually seeks out a warm environment.	Prefers a warm room and may find it difficult to tolerate cold.
Design in Counseling	Prefers informal design, such as circular arrangement in a carpeted area for group counseling.	Usually likes informality and diversity in design.	Depending on the learning task, may prefer formal or informal arrangements.	Usually feels more comfortable in a formal setting.	Prefers formal design; tends to work consistently in the same area at a desk/hard chair.
Motivation for Learning and Counseling	Exhibits low motivation for learning and may demonstrate resistance in counseling.	Tends to procrastinate; evidences difficulty in beginning tasks.	Vascillates between high and low motivation depending on the approaches used in counseling.	Generally highly motivated for learning and counseling processes.	Consistently well-motivated; accomplishes learning tasks with enthusiasm.

Elements	Score 20-29	Score 30-39	Score 40-59	Score 60-69	Score 70-80
Persistence during Counseling	Low level of persistence which may be evidenced by leaving counseling prematurely.	Somewhat limited time on-task; distractible.	Depending on level of interest in counseling, may or may not persist until goals are achieved.	Generally commits self to counseling and endures until goals are achieved.	High level of persistence in counseling; works consistently to achieve goals.
Responsibility Evidenced in Counseling	Has to be reminded and constantly reinforced in counseling. Tends to blame others for own life circumstances.	Somewhat irresponsible, which may be evidenced in lateness or absence from sessions.	Vascillates between responsible and irresponsible behavior in counseling.	Generally follows through on commitment to counseling.	High level of responsibility in counseling; assumes responsibility for self and behavior.
High Versus Low Structure in Counseling	Responds to counseling approaches which utilize minimum structure and allow free expression (e.g., gestalt therapy).	Prefers counseling approaches which allow for minimum structure, e.g., client centered counseling.	Prefers eclectic counseling approaches in which both active and passive techniques are utilized.	Prefers counseling approaches which define goals clearly and utilize structured techniques, e.g., behavioral counseling.	Strong need for structured counseling approaches and concreteness, e.g., trait-factor counseling.
Learning or Counseling Alone Versus Peers	Prefers to work things through alone; self-sufficient in many areas.	Generally prefers to resolve problems independently without peer counseling.	Depending on the situation, may seek help from peers or resolve problems alone.	Generally an effective peer group member.	Peer group counseling is the strongly preferred mode. Change is most likely to occur as a result of group activities.
Individual Counseling	Not a good candidate for individual counseling. Likely to exhibit resistance in counseling.	If given a choice, would not seek out individual counseling.	Depending on the counseling approaches used, change may occur in individual counseling.	Generally comfortable and motivated in individual counseling.	Individual counseling is the strongly preferred mode.

Elements	Score 20-29	Score 30-39	Score 40-59	Score 60-69	Score 70-80
Variety in Counseling Sociological Structure	Generally uncomfortable with a variety of approaches; tends to favor a single mode of counseling.	Probably has a preference for a single counseling mode.	Depending on the situation, may be open to a variety of counseling modalities.	Generally comfortable with diversity in counseling modes.	Prefers a combination of approaches in working through concerns, including alone, groups, and individual counseling.
Counseling Using Auditory Approaches	Tends to be "turned off" by talking approaches in counseling. Has difficulty listening and focusing on what is communicated.	Generally finds it difficult to participate in counseling if auditory approaches are used exclusively.	If the counselor is perceived as interesting and supportive, auditory approaches may be effective.	Generally auditory approaches in counseling are effective.	Responds well to auditory approaches; seems to have a tape recorder going and can recall conversations verbatim.
Counseling Using Tactual Approaches	Tends to avoid doing things tactual, such as writing, picture drawing, etc.	Generally there is limited interest in tactual approaches.	Does not have a strong preference for tactual approaches, but may find these approaches helpful on occasion.	Finds tactual approaches helpful when utilized during the counseling process.	Responds well to "hands on" approaches in counseling and the use of techniques such as puppetry, clay modeling, draw-a-picture, computer use.
Counseling Using Visual Approaches	Tends to be "turned off" by visual approaches in counseling such as bibliotherapy, or the use of pictures or films.	Generally finds it difficult to absorb visual content.	Depending on the situation, visual approaches may enhance counseling.	Generally finds visual approaches helpful in counseling; e.g., the use of modeling through videotaping.	Responds well to visual approaches; seems to have a camera going and can recall faces, scenes, places.

Elements	Score 20-29	Score 30-39	Score 40-59	Score 60-69	Score 70-80
Counseling Using Kinesthetic Approaches	Very uncomfortable with kinesthetic approaches in counseling.	Prefers not to engage in action-oriented counseling strategies.	No strong feelings about kinesthetic approaches; discretion needs to be used.	Has a preference for action-oriented counseling approaches which involve body movement.	Prefers counseling approaches that require body involvement such as roleplaying and psychodrama.
Need for Intake during Counseling	Never has a need for intake while working.	Rarely utilizes food or drink while working.	Occasionally will use intake and find it enhances the learning process.	Often uses intake while learning.	Uses some kind of intake, such as food or drink, when working or learning.
Evening Versus Morning Energy Levels	Prefers evening hours for working, learning, and studying.	Generally prefers the evening for working on tasks.	Time of day or night is relatively unimportant.	Generally prefers the morning for working on tasks.	Prefers morning hours for working, learning, and studying.
Late Morning Energy Level	Sluggish and low energy level around noon.	There tends to be a lull in energy level around 11 a.m.	Time is not a critical element here.	Generally prefers the late morning for working.	High energy level in the late morning hours.
Afternoon Energy Level	Afternoon is a poor time to schedule counseling activities.	Energy level begins to drop during the afternoon hours.	Time of day is not important; energy level is relatively constant.	Energy level begins to increase during the afternoon hours.	Afternoon is an excellent time to schedule counseling activities.
Mobility Needed in Counseling	Low need for mobility in counseling with the ability to sit for relatively long periods of time.	Generally prefers passive, low mobility, sedentary approaches in learning or counseling.	Responsive to either passive or active approaches in counseling with no strong preferences for either.	Generally prefers action, high mobility approaches in counseling.	Prefers action-oriented approaches in counseling, e.g., roleplaying, mime, art therapy.

CHAPTER II

UTILIZING LEARNING STYLES IN COUNSELING AND STUDENT PERSONNEL PROGRAMS

The first steps in developing counseling services for college students are to conduct a needs assessment and then to design a program that is responsive to those needs. In a study by Carney and Savitz (1980), some interesting differences were found on problem areas as perceived by students versus faculty. College students viewed substance abuse, career choice, job-search frustration, sex-related concerns, lack of knowledge of leisure and social activities, difficulties in negotiating the system, emotional problems, and the adverse effects of stereotyping as more common problem areas than did faculty. Conversely, faculty tended to perceive scholastic problems as more pervasive than did students. Tryon (1980) conducted an extensive review of the literature on student perceptions of counseling center services. One of her major conclusions was that students are more likely to use counseling center services now than in the early 1960s, but students are more likely to seek out help with an educational-vocational problem than with a personal-social problem. Wolf and Dameron (1975) found significant differences between 20 two-year and 16 four-year college counseling centers. The two-year college centers spent significantly more time in providing academic advice than on personal-social-emotional counseling, and the opposite was true for the four-year counseling centers. Thus, some of the important variables to consider in assessing the counseling needs of college students are student versus faculty perception of problems, type of problem, and type of institution.

The Student Affairs Research Committee (1980) at the University of Kansas has developed a Student Needs Survey, which is an objective, empirically based instrument. Evans (1985) used this instrument with residence hall students at Indiana University to identify unmet student needs and develop program priorities. The highest priority areas for this population were as follows:

- Learning basic interests
- Learning to study effectively
- Obtaining more information about academic major

- Obtaining information about graduate schools
- Developing better time management skills
- Learning how to concentrate

The second highest priority areas were as follows:

- Talking about academic matters with faculty and student personnel workers
- Receiving more feedback about classwork
- Obtaining assistance in job seeking
- Feeling good about oneself
- Asserting oneself
- Overcoming anxiety about tests
- Overcoming fear of expressing ideas in groups
- Obtaining help in selecting courses
- Making more friends
- Obtaining more information about grading

Low priority areas included concerns about drugs, alcohol, homosexuality, sexism, and racism. Identification of college students' unmet needs has important implications for student personnel program development in such areas as student advisement, counseling, workshops and outreach services, and residence hall services.

Generally, the approach is to survey the undergraduate population to determine need areas and then to organize workshops to respond to these needs. Gallagher and Demos (1983) suggest assessing student needs with an instrument such as A Proposed Student Goal Checklist, which identifies concerns in academic and financial areas, personal relationships, and sexuality. Using this list compels students to articulate counseling outcome criteria in terms of concrete goals. The feedback from this survey can be used as a basis for developing workshops. The Checklist is provided below.

A. Academic

1. To be better able to cope with academic pressures.
2. To improve my grade-point average.
3. To handle a particular course or courses better.
4. To better negotiate the university system (get through administrative red tape).

5. To obtain clarification about university regulations.
6. To decide to stay in versus leave school.
7. To improve my study habits and skills.
8. To budget my study time better.
9. To select an appropriate major or resolve conflict between two alternative majors.
10. To receive assistance in improving my reading or writing skills.
11. To overcome anxiety about exams or class participation.
12. To deal with a rules and regulations problem I have with a teacher.

B. Career-Vocational

1. To decide on the right career for me.
2. To have a job that is relevant to my career choice.
3. To become more sure about my vocational future.
4. To obtain information on employment opportunities.
5. To obtain information about effective job-search techniques.
6. To receive information on graduate or professional school programs and admission standards.
7. To learn about the relation between my college work and the requirements of the vocational area(s) in which I'm interested.
8. To deal better with problems occurring on my present job.
9. To change jobs.
10. To find a job.

C. Financial

1. To improve my financial circumstances.
2. To learn more about what resources exist for financial support.
3. To budget my money better.

D. Personal Relationships

1. To improve my relationship with a teacher (or teachers).
2. To improve my relationship with my mother, father, or other family members.
3. To improve my relationship with my boyfriend or girl-friend.
4. To improve my relationship with my spouse.
5. To improve my relationship with one or more same-sex friends.
6. To improve my relationship with my roommate(s).
7. To resolve a conflict on whether to get into a relationship.
8. To resolve a conflict on whether to break off a relationship.
9. To obtain greater independence from family domination and control.
10. To find a boyfriend or girlfriend.
11. To feel less lonely, isolated.
12. To join a particular group.
13. To improve my social skills.
14. To be more open and trusting toward others.

15. To be more sensitive toward others or be more aware of the impact I have on them.
16. To be less competitive in social situations.
17. To be less fearful about saying what I feel or think.
18. To change behaviors (with others) that are troublesome to me.

E. Sexuality

1. To have a more satisfactory sex life.
2. To resolve a particular conflict I have over sexuality.
3. Not to feel caught up in sex-role stereotypes.

F. Self

1. To have a better sense of who I am.
2. To have more of a sense of direction--know what I want.
3. To know better what my values are.
4. To accept my limitations.
5. To have more self-esteem, self-confidence.
6. To feel more mature, competent, adult.
7. To be able to cope with stress or pressure better.
8. To get rid of bad habits I don't need (specify).
9. To build new habits into my life (specify).
10. To have less tendency to distort reality--see things the wrong way.
11. To have greater involvement and commitment to things outside myself.
12. To lose weight.
13. To increase in strength.
14. To make myself more attractive.

G. To learn how to allocate my time better among school, personal life, and (if applicable) work

H. To cope with or overcome an alcohol or drug dependency problem

I. Symptoms

1. To have more pep and energy.
2. To have more motivation.
3. To have less tension/anxiety.
4. To feel less depressed, blue.
5. To have less anxiety over a particular type of situation.
6. To feel less guilty.
7. To feel less angry, resentful.
8. To sleep better.
9. To deal better with a physical problem (headaches, ulcers).

J. Miscellaneous

Developmental issues are also significant considerations in assessing student needs and designing programs. Chickering (1969) has identified seven vectors that suggest a hierarchical pattern in college students' development--developing competence, managing emotions, developing autonomy, establishing identity, freeing interpersonal relationships, clarifying purpose, and developing integrity. In this model, the central vector toward which all others magnetically gravitate is the establishment of identity. Successful passage through the college years should result in an integrated view of self, evidenced by consistency and continuity of values, thoughts, attitudes, and behaviors.

Okun (1984) has described the developmental tasks of the college student as follows:

1. To begin to make some decisions reflecting the formation of a basic ego identity.
2. To make conscious decisions regarding sex roles, specifically to adopt, reject, or modify sex-role stereotypes.
3. To make decisions about courses, college major, living arrangements, financial issues, and vocational choice.
4. To develop and maintain new heterosexual and same-sex relationships and to move away from outdated relationships.
5. To renegotiate relationships with the immediate family and significant others; the process of disengaging from parents should result in individuation.

Counseling based upon individual learning styles, as an eclectic model compatible with individual needs and differences, is particularly well-suited to helping college students meet their expressed needs and deal with developmental tasks. Additionally, if students are knowledgeable about their learning style preferences, they are better able to utilize their strengths by altering their learning environment to accommodate their preferences.

Because of these individual differences and the accompanying challenge to help all students reach their highest potential, Blocher (1977) asks, "Shall we then supplement our notions of what men and women ought to be with an additional goal-structure about the nature of the learning environments that they deserve to experience as developing human beings" (p. 353).

Individuals in the counseling profession place major emphasis on looking at individuals as unique persons. Because of this outlook, they attempt to help individuals identify the ways they are unique and use this uniqueness to adapt to the world in which they must function. Part of this uniqueness is learning style, relating as it does to how individuals prefer to learn and apply information. This in turn is directed toward increasing their learning, productivity and achievements.

Utilizing Learning Styles in Individual Counseling

Information obtained about learning styles can be used as a basis for a conference between the counselor and the student. The counselor should go over each of the important learning style areas profiled from the client's responses and ask what that information means to the client. For example, why does the student prefer considerable structure, direct experience, and close affiliation with the counselor or instructor? The conference provides a basis for a counseling relationship and an opportunity to discuss ways of presenting information that will be compatible with the client's preferences and the counselor's counseling strategies. What does it mean for the student to like structure, prefer to learn tactually and need mobility, for example. Often the way the student meets these needs varies individually.

Counselors have used learning style information to decide which students function best in groups (as opposed to individual counseling), to identify students who are not highly motivated and have difficulty persisting, and to determine how students prefer to have educational, personal, and career information presented to them. The learning modalities most related to these areas include sensory preferences, structure, and environmental design.

The one-to-one relationship that can develop as counselors interview students about their learning style preferences often provides new insights that may have a positive influence in helping students to learn and adjust to their environment. Counselors are encouraged to have an individual conference with each client to discuss his/her unique learning characteristics.

Elements of learning style which are compatible with selected counseling objectives and interventions for students at the college level are illustrated in

Table 3. In addition to the objectives outlined, areas such as competition, stress, disappointment and failure, coping with loss, managing conflict, alleviating alienation, and building self-esteem can be developed into counseling objectives to accommodate the developmental issues and learning style preferences of college students.

In deciding upon the counseling interventions that are most appropriate for each student, the counselor should (1) analyze the learning style profile of the student, (2) consult Table 2 to interpret preferences and rejections, and (3) subsequently select counseling interventions that are compatible with these learning style preferences.

The following is an actual counseling interview discussing the client's learning style based on his computerized profile (Table 4). Selections from the transcript are used with the client's permission.

Counseling Interview with Frank

(C) Frank, what I want to do is to interpret your Productivity Environmental Preference Survey that you took a couple of days ago. I ran it through a computer and compared your raw score, which you see on the left side, to national norms and then calculated a standard score. Your score was profiled along each of these dimensions. There are no good and bad scores. It's a description of the kind of environment you like to learn in. There are twenty areas, including such things as sound--do you like it quiet or do you like sound present when you study new material--and mobility, do you need to get up and move around or can you stay in one place when you study. If your score is greater than 60 or less than 40, it is important to you. Everything within this middle category means that it depends on the situation; sometimes it's true--it's neither a high preference nor a low preference for you. For instance, on the first scale, your asterisk is in the middle area, which indicates that sometimes you like it quiet and sometimes you like sound present, you can tolerate sound. Individuals that like sound present will probably have music playing when they are studying or they block noise out. Does "it depend" for you?

(F) Yeah, I think so. Most of the time when what I'm studying is difficult, I want it to be real quiet. If I'm reading something that is more for enjoyment or something not as difficult, then I can turn on the radio or something, but I never have the TV on when I'm reading or studying.

Table 3

Learning Style Elements Compatible With Selected Counseling Objectives and Interventions: College Level

	Objective in Counseling	Counseling Intervention	Compatible Learning Style Elements
1.	To clarify values regarding premarital sex and to help students deal with pressures for intimacy.	Initially schedule same gender counseling groups, led by counselor, in which group members discuss their values, explore the positive and negative aspects of various value systems, and roleplay situations in which values are tested.	Peer sociological preference; accommodates auditory, tactile, kinesthetic styles, and moderate structure and mobility needs.
2.	To identify high risk students who are in danger of dropping out of college and explore ways to become more involved in extracurricular activities, improve study skills, and define life goals.	In individual counseling assist students in understanding their individual learning styles, applying these findings in the classroom and in studying, and identifying extracurricular activities that would accommodate their learning style requirements.	Adult sociological preference; auditory and visual preferences; informal design.
3.	To assist students in developing problem solving and decision making skills in relation to social, vocational, and educational concerns.	In career education classes develop contract activity packages that accommodate a wide variety of learning styles. For example, in learning about careers utilize computer packages, interview various college personnel, profile data, etc. to gather and process information.	Contract activity packages provide a variety of activities or resources to achieve learning objectives and accommodate varied learning style patterns.

Objective in Counseling	Counseling Intervention	Compatible Learning Style Elements
4. To assist students in resolving dependence/independence issues in relationships with parents.	Use transactional analysis techniques or psychodrama in groups to analyze ego states and game playing.	Peer sociological preferences; left brain dominant, high structure.
5. To identify aggressive, assertive, and withdrawn behaviors and to help students assess themselves in these areas.	Roleplay interpersonal group counseling, using a variety of behavioral responses and encourage students to evaluate these vignettes in terms of "how they behave" versus "how they would like to behave."	Peer sociological preferences; mobility, visual and auditory strengths, right brain dominant.

INDIVIDUAL PROFILE

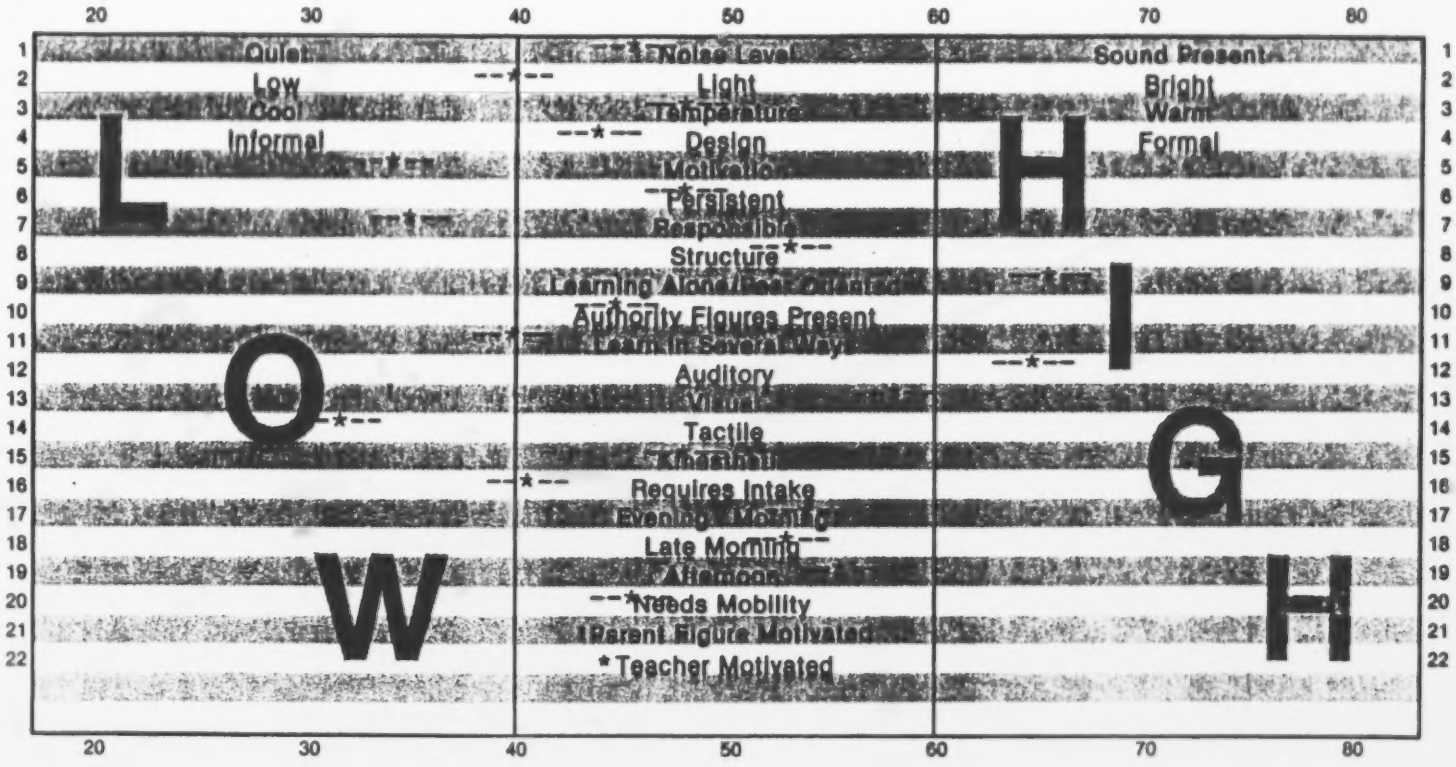
PRODUCTIVITY ENVIRONMENTAL PREFERENCE SURVEY

Name: FRANK **Sex:** M **Year in School:** **Date of Birth:** 58 / 07 (Yr./Mo.) **I.D. No.:**

Group Identification: CASE STUDY **Special Code:** **Date:** 11-20-1985 **Group No.:** 999

PREFERENCE SUMMARY

Raw Score	Standard Score
14	46
16	40
14	48
15	44
16	34
17	48
20	35
11	53
30	66
11	45
12	40
16	65
23	58
8	32
15	48
14	41
28	54
10	53
8	56
14	46



24

Table 4

40

41

PROFILE NO.: 1

(C) So if you know that the material is going to be stimulating in and of itself, then the noise doesn't make much difference, but if it's something you really have to concentrate and work on, then you need quiet. I want you to make any comments or questions anytime you want to--don't worry about being recorded. You prefer more of a low light when you study and you don't like real bright lights.

(F) Yeah, that's true.

(C) Is that true? How do you deal with the lighting situation?

(F) Well, mostly, I think I like to have indirect light.

(C) Indirect?

(F) Like at a desk, I have a pole lamp rather than big overhead lights. If I use my office, I don't usually use the florescent light; I usually just have a couple of lamps on in different parts of the room.

(C) Does it create a glare on your eyes--have you been aware of this very much?

(F) Well, yes, on some things. I don't know, I just think it feels more cozy and homey to me rather than to have big overhead bright lights going. You know the department has the big long lights, and that seems very cold and impersonal to me.

(C) The next area is temperature. This would say that warm and cool is not really a strong preference for you. You aren't particularly bothered by room temperature when you are trying to concentrate. There are some people who really get uncomfortable if it's too warm and they don't wear sweaters or anything like that, and there are other people who put on three layers of clothes. And if you look outside on a day like today, when it is thirty degrees, there are people who are really bundled up and other people, you know, who will be dressed real lightly. Have you been aware of that?

(F) I think that's true most of the time. I think I'm more sensitive to heat than I am to cold. And I can tolerate coldness a lot better than a lot of people. I prefer of course to be cooler than warmer. That's my preference. I think I feel that if it's colder, you can always put more clothes on, but when it's warm you can only do so much with it. But usually, when I'm in my apartment, I'll turn up the airconditioning and turn down the heat.

(C) There are three areas here that are highly correlated. One deals with motivation, the second is persistence, and the third, responsibility. Motivation is really...

(F) What's this "design?"

(C) Oh! I skipped that on there. Design has to do with formal and informal. Formal design is like when you want to sit up in a straight chair and have formal furniture.

(F) Oh, I see.

(C) Informal design is like when you want to relax on a pillow, cushion or bed or something like that. This would say that you don't want it real formal, but neither do you want it real relaxed when you study. What kind of environment do you prefer to study in?

(F) Well, that makes sense because in my office at home I have a chair not like you're sitting in, but mine can recline and move about rather than being a straight back chair which is immovable. I like that because I can sit up straight and I can get a good view of my desk, and so forth, so I can write. But when I want to read I can have my feet up a little bit on the rungs and lean back. It is somewhere in-between.

(C) Well, that's interesting. There are lots of people who like a real formal or a real informal design and are really uncomfortable if they have to concentrate in any other way.

(F) I can't study in bed or lying down on the couch, those kinds of things, because then I fall asleep or get distracted or I'll want to do something other than study. I can only study at my desk, but I want to be comfortable.

(C) When I'm trying to produce, I like to sit up at a table, but then for casual reading I will get in a more comfortable chair, but never study in a bed. So we are similar in that respect. As I was mentioning, these three areas--motivation, persistence and responsibility--are highly correlated. Let me talk about these again. Motivation deals with self-motivation and that means, when you start activities, do you tend to follow through on them. Responsibility has to do with whenever a teacher wants you to do something, do you follow through and do it? We did some research comparing gifted and non-gifted individuals, and gifted individuals said that they were not responsible. And when we looked at that, it really had to do with a kind of conformity, following through on what the teacher wants one to do. This would say that you don't want to follow through when a teacher gives an assignment, that you would prefer to follow through on something that you want to take initiative on, and to do it because you have an interest in it,

not because the teacher wants you to. Does that seem to make sense? I think that you are a good student, how do you...

(F) Well, that's funny, I'm surprised that it was that low. I think overall when I have an assignment, I do it without any mulling over. I just go ahead...

(C) Just go ahead and do it. Well, that's your preference, you need to trust your own judgments and your own senses. This is saying that you would prefer to do it not because the teacher wants you to, but because you want to.

(F) Yeah, I guess that would be true, I do it for my own sake. I don't want to just because someone else wants me to do it. I think it's nice when they work together, when you have something you have to do for work or school and also because I want to do it; those two ought to work together, or at least do it because I want to.

(C) This interpretive booklet shows all of the different ways you can learn or the different ways you would prefer to learn. You'll notice it says for the area of motivation, if your standard score is 40 or lower, you prefer short, uncomplicated assignments or tasks that permit frequent supervision by the supervisor or teacher. Experiment with short range motivators and reinforcers, log progress and results, get feedback at frequent intervals. If you are 60 or higher, self-design objectives and use procedures that permit self-pacing and rapid achievement. Do those help you make a distinction?

(F) Yeah, that does, that helps, that makes sense. If I have a big project to do, then I need to break it down into smaller target goals so I feel like I'm getting somewhere. Often times if I have something that I'm not too sure of in terms of the overall picture, then I will ask for some feedback at various intervals to make sure that I'm going on the right track. It's easier to feel like I'm making progress if I can see those smaller goals accomplished. So that makes sense.

(C) Next, is persistence; read through the interpretive booklet and then we can talk about persistence. (Pause.) Persistence has to do with like when you start an activity, do you tend to follow through on it, or do you tend to start other activities? You prefer short-term assignments--this is more in the middle of the scale--so it's not as strong.

(F) Yeah, I guess that would impact on the kind of project and then on how busy I am. Sometimes I have projects going on where I need to do little pieces of each one, that way I can maintain high productivity and more energy. Then at

other times, when things require so much attention that there is one big project, something I'm really interested in, then I'll just go ahead and get the whole thing done.

(C) We talked about responsibility in a way, in terms of motivation, which indicates--if your score is 40 or lower and your score is--that you prefer assignments with short-term, single or dual objectives, and would like frequent checking by the supervisor or teacher to help you make sure you are going in the right direction. It suggests that instructors base tasks or assignments on your interest and use interim praise or rewards and encourage your personal choice. Instructors should explain why assignments are important, speak to you as a colleague and not down to you. If your scores are over 60, then you are more comfortable with long-term objectives and are willing to follow long-range directions and don't want assignments broken down quite so much. Your score on structure is in the middle. Structure is, in a way, related to this, but this has to do with whenever a teacher or a counselor would ask you to do something, how much of the detail would you want; in other words, do you want to know how long it should be, how many pages, what the details are, what the objectives are. This would say that sometimes this is true, but sometimes it's not. There are some people who want to know the details on everything and you're not quite as strong as they are, but yet you don't want it completely unstructured.

(F) Yeah, I think that also would depend on the area of work or the project. I think that if I feel more comfortable with something and I'm more aware and more knowledgeable, then I'm more sure of myself and I don't need details filled out; but in a situation, a new environment, something I don't know about, then I like to have more clear guidelines.

(C) Well, do you have any comments about these first areas that we have talked about?

(F) Not that I can think of. It seems to be pretty indicative, at least in terms of where I fall on it.

(C) The next three areas deal with sociological preferences and that is whether you like to learn alone, which would be below 40, or whether you like to learn with peers, like in discussion groups, which would be above 60. Also whether you like to have authority figures present, such as teachers, and if you like to learn in several ways. Now in terms of the area that stands out most with you, you like

to learn with peers, like in discussion groups, talking about stuff, back and forth, as opposed to learning by yourself. How do you usually prefer to study when you have an assignment or project to work on?

(F) I think in initial stages I always pretty much study by myself. I feel there is some new material I've got to learn and try and integrate it all, and then toward the end I find getting together with peers helpful because I need to talk over the areas that are ambiguous and I think sometimes the verbal, with the talking and hearing, helps commit some of it to memory or clear up some obstructions that I have along the way when there are some things I didn't understand.

(C) Well, you just made an interesting comment, which deals with another area on your profile, and that is, you are really a high auditory learner. You like to hear things when you learn, like for people to lecture or talk, so you must use peer-oriented in that same kind of way.

(F) Well, I think so. You know, I think some people have sort of a photographic memory, that people can open a book and remember it. For me, it doesn't work that easily. If I've read something previously and then if I hear it, somehow the association is much better. That's why I think it's helpful for me if I read a chapter before the lecture; then when the professor's talking about it, I say "oh yeah," I read that.

(C) Well, you're dealing with another area which has to do with visual. Some people like to visualize images and draw pictures and things like that. This would show that your highest preference is auditory, and then you are somewhat visual, but that's not your preferred modality. I want to go back and tie it to peer-oriented. You don't like to learn too much in a variety of ways; you've got a pretty set style in terms of how you want to learn. Is that established for you with your auditory preference? This would indicate that you want to listen to lectures and learn by hearing people talk. You mentioned a good strategy for you is to go ahead and read the assignment in advance, and then when you hear it, you really learn it.

(F) Right.

(C) But just reading it alone is not enough for you. Now, often we would say that the best way to learn--I don't know if you've tried this or not--is to hear it first it and then reinforce through your secondary modality, which would be visual. In other words, if you could hear it first, then read it--have you tried it in reverse order?

(F) Yeah, umm.

(C) But that doesn't work as well?

(F) Well, I think again some of it depends on the kind of material it is. If it's more memorization or math, I think for me it is helpful to hear it first and then go back and look at it. If it's something that is more conceptual, more theory-oriented or more philosophically oriented, then I find if I read it first to get initial formulations of the content matter, then it is helpful in the discussion in terms of trying to get my ideas sorted out. At the point when I think it is more memorization than integrating it into some kind of conceptual scheme, it's helpful to hear it first. Then I attach what I heard to what it looks like; like in math problems or trying to figure out a design, it's helpful to hear it first and then go back and look at it, map it out.

(C) You've introduced an area that we think is important in terms of learning and how it interacts with learning style, and that is an area called cognitive style. It deals somewhat in terms of left and right brain preference. You've heard of that?

(F) Um, hum.

(C) We call it hemisphericity. What I think you may have described is that you may tend to be a little more right-brained, in that the best way you can learn is if you can have some kind of overall conceptualization and then go back and try and fit material into your conceptualization. It seems to me that the reason you would prefer visual predominantly is because you begin to get a feel of what it is and then when you hear it, you are able to confirm and put the material together.

(F) Right.

(C) Whereas you may have difficulty in memorizing things, and that would be more likely the sequential kind of thing that your left brain operates on. That's why if you can read it, then hear it, you've probably got to read it again, but you really have to work on it in terms of memorizing it.

(F) Hmmm.

(C) I don't know if you had difficulty in learning to read as you went through grade school or whether that was pretty easy for you. The reverse may not be true; there are plenty of good readers who are auditory. But auditory learners who are more right-brained tend to have difficulty in sequencing or learning with phonics instruction. How did you learn how to read? Do you remember or has it been too long ago?

(F) I don't remember that well. I've been doing it so long.

(C) Do you remember using a phonetic type strategy or was it more whole word learning?

(F) We used phonics and I never had trouble with reading; I always liked it, although I wouldn't say I could read fast. I always had to read at a certain pace and think about it as I was going along. I think that is apparently why, in terms of what we discussed earlier, it would have to be quiet when I needed to concentrate. I was never one of those who could just blaze through it and pick it right out. Sometimes I would have to; I would read it once quick or pick something out, and then I would go back and read it again in the whole context.

(C) I don't think we know a lot at this point about how right and left brain interacts with this area. I think it interacts with learning in areas where people have difficulty, in math or languages, and how they go about learning, like inductively or deductively, or using a holistic or linear approach. The next area is how you prefer to take in information. You do not like to learn tactually. People who like to learn tactually, lots of time, like to write detailed notes, like to touch, take stuff apart, and that's the way they learn. You're smiling?

(F) Because it's so true, I hate mechanical things. It doesn't help me at all to take something apart, because if I do, I can never put it back together!

(C) Well, maybe we had better go on! We won't talk about that any more. Kinesthetic is a little different. Now, there is usually a high relationship between tactile and kinesthetic and there are lots of people who have difficulty learning who really are tactile-kinesthetic learners. Kinesthetic deals with whole body movement, like drama, puppetry, or acting in some kind of way, and your score would say that is neither high nor low for you. The next area is intake and that's more toward the low side for you. Some people are real high. Whenever they study they like to have coffee or they like to get up and nibble on food, and this would say that you do not need to do this very much.

(F) Yeah, that's true. I schedule in those breaks when I study and then I go and get something to eat during the break.

(C) You do not have a strong preference in terms of time of day. When do you study? How do you decide during the day when you are going to study?

(F) Well, I think, in part, my schedule depends on what else I'm doing. I think it used to be that I would prefer to study in the evening rather than in the

morning or the afternoon and use the morning for more active kinds of learning, either going to class or taking care of some things where you have to move around or write rather than just sit and read, because then I get sleepy. I don't know if it's because I'm getting older or what, now I feel like I can study pretty much at any time if it needs to get done.

(C) Well, as you described your pattern, first of all you had to think about it quite a while, which indicates that you don't have a strong time of day that stands out. There are other factors that take priority over when you study; really any time of the day is fine.

(F) Yeah, I think that's true. I don't use time of day as a criterion for when I do work. I use criteria like what needs to be done and then I go ahead and do it. I know now I do enjoy the evenings for leisure type activities, but if I have to do work, then I do it.

(C) The next area is mobility. If it was above 60, it would say that you need to get up and move around pretty often, like every 15 minutes or so. If it's below, then you can stay in one place for a long time, maybe an hour or an hour and a half. This would say that in this area it depends; it is not real high or real low. Sometimes you could stay at a task for a long time and then sometimes you get up and move around. How do you visualize yourself?

(F) Well, you got it, I think again it has to depend on the subject matter. If some things are more difficult or if I am having a real hard time with it, then I want to get up. That's why, like I said earlier, I enjoy having my desk at home because I can change my sitting position relative to the desk or sit straight up without getting away from the task. So I can stay there for an hour, two hours, sometimes even three hours before I get up and go take a break and then that way, I'll come back to read my notes. So it does depend on the time of day or how tired I am. Normally, I don't need to get up or move around a lot, and if I have to get up from my desk, then I do.

(C) Do you have any response overall to the profile or any response related to when you took the inventory? How did you think it would come out, or did you have any idea?

(F) Well, it seemed to me that the questions on the inventory were kind of self-explanatory or apparent, so I had some ideas about what might happen. I was surprised that the motivation and responsibility scales were in that direction, but

given the explanation, that makes more sense also. And there were some things when I was answering the profile that I thought, "Well, I don't know." There could be two or three of the five choices that would be true. I think that some of those had to do with time of the day, learning alone or with somebody else, having authority figures, and learning in several ways. With the ones that ended up being more in the middle of the scale, I can remember some of the questions that probably contributed to the results. I guess what would determine the situation would have been this or that, where at other times the answer was real clear.

(C) I think one of the things is that you don't have a lot of strong preferences, so I suspect that you're the kind of learner, Frank, that is pretty adaptable and pretty flexible. You do have some preferences that are a little stronger--like auditory learning, with peers, and no tactual learning at all--but otherwise you're a pretty flexible learner. It does not make a lot of difference to you. You tend to learn in spite of or regardless of how you are taught.

I would like for you to take the profile and the interpretive booklet, read through it, and if you have any questions or if you want to come back and talk about it, why, you sure can.

(F) O.K. Thank you very much.

Commentary and Suggestions

Frank's interview covered several areas from the learning style model. He was a doctoral student who, overall, has a pretty flexible pattern of learning. Nevertheless, there are some areas that are important for him. He is definitely peer oriented, which means he can be very frustrated in a learning situation if he is forced to learn by himself rather than through group interaction. Frank also prefers to learn through his auditory sense and dislikes learning tactically, so writing and notetaking could be very difficult. Since his motivation and responsibility areas are low, as well as his relationship to authority figures, it is important to present assignments so that he feels he is learning for his own reasons and not for those of someone else. An additional consideration is to look at the fine distinctions made by the counselor in terms of Frank's learning style. For example, it depended a lot on whether it was new material, or whether Frank had some overall view of the material, as to whether he used visual or auditory as his first modality or whether he studied by himself or with peers.

Many students, by the time they are in graduate school, have identified through trial and error the patterns that work best for them. This is less likely to be the case for undergraduates. Even the most adaptable and flexible learners, however, can profit from a thorough understanding of their preferred learning environment so that they can be optimally productive. This understanding may also help instructors present material in such a way that enables students to make maximum use of their learning ability and energy. For those students who are not able to adapt and lack the motivation or the energy to function in a variety of learning environments, it is imperative that they understand their unique learning styles.

In the counseling interview, one of the important things to help individuals realize at the outset is that there are no good and bad responses on the inventory. It is simply a profile of the kind of environment they prefer to learn in. This clarification is necessary because clients often believe that with any kind of test there are right and wrong answers. It needs to be stressed that this is just an inventory or a profile, a way to describe systematically how individuals learn in various kinds of situations.

In addition, it is important here as in any counseling relationship to establish rapport and not push a particular interpretation. Learning styles research and development at this point have not devised a precise measure. There are so many circumstances that might affect how an individual prefers to learn. The counselor should be very clear in helping clients accept responsibility for how they see themselves in various learning situations, and use counseling strategies and interview techniques to help them identify their learning styles and determine what seems to work in most situations and how it interacts with the other learning style variables. Questions need to be posed in terms of learning new or difficult material, not what one would do if one is casually reading or in a familiar work situation. It is important to make some distinctions, based on the counselor's knowledge, that all of the learning style variables are not equally significant with respect to achievement. Research has found that the auditory/visual, tactile/kinesthetic modalities are very important, as well as peer-oriented or learning alone, time of day, temperature and sound. Clients should also realize that all individuals have many variations in these areas and, because of this, that no one individual is inferior because of particular learning style preferences. Some data may help them

understand--e.g., only one-third of adult learners prefer to learn auditorally, another third prefer to learn visually, and the rest prefer to learn tactically or kinesthetically. Many individuals do not believe that these differences are acceptable. It helps them be a lot freer in responding to their own style, taking responsibility for it, and trying to make it work for them when they realize others have these differences.

Utilizing Learning Style in Group Counseling

There are several learning styles that are particularly suitable for group counseling or other kinds of group work. These include peer-oriented learners, those who learn best with other people as opposed to alone, and those who prefer learning in ways other than auditory. Specific group applications to be described in this section are art therapy, career decision making, counseling mime, and psychodrama.

Art Therapy

The use of art as therapy implies that the creative process can be a means both of reconciling conflicts and of fostering self-awareness and personal growth. When using art as a vehicle for psychotherapy, both the product and the associative reference may be used in an effort to help the individual find a more compatible relationship between his/her inner and outer worlds (Feder & Feder, 1981).

Feder and Feder (1981), in defining art therapy, state that there exists a relative mix of both art (creative impulse) and therapy (emotional expression). James Hillman (cited in Vogt & Vogt, 1983) indicates that the basic concept of art therapy is the expression of one's needs through images. This is particularly useful for visually, tactually and kinesthetically oriented clients who prefer an informal design. It may be difficult for clients who have auditory preferences, or for bright, articulate individuals who tend to use verbal expression as a defense to keep from exploring who they are. When the counselor is able to use another medium such as art or music therapy, the counselor is able to break through the client's defenses more easily.

Everything we know and feel and every statement we make are fantasy-based in that they derive from psychic images (Vogt & Vogt, 1983). It is through attention to these images and working with them that we can understand and resolve our psychic needs. Therefore, when we express ourselves through art, we are giving meaning to our lives and experiences. We are striving to find out who we are, what we have been, and what we want to be in the future. Vogt and Vogt (1983) state that art therapy sessions are designed to involve each client in a process of finding images that express something meaningful for him or her. Clients feel that such works really are a part of themselves, a sort of symbolic x-ray that shows not only how or who they are at present, but also how they were and what the future may hold for them.

Wadeson (1980) indicates that imagery is the most basic. When we cannot speak, we can express ourselves more readily through drawing. The use of art often serves as a shortcut to deep and important issues that would not readily come up in straight, verbal therapy because they are awkward or embarrassing to speak about (Vogt & Vogt, 1983). While images are often hard to express verbally, they can be easily drawn. The overall goal of art therapy is to provide a structure that enables clients to see their lives from a new perspective and find the means to resolve conflicts. The energy that is released can then be used for productive endeavors (Vogt and Vogt, 1983).

Applications of Art Therapy. According to Wadeson (1980) art therapy can be applied in many settings, including the following:

1. Counselors can use art therapy in private practice for insight-oriented, long-term counseling.
2. Counselors can use art therapy for clarification purposes in short-term crisis intervention.
3. Elderly residents in nursing homes may use art therapy as a life review.
4. Drug and alcohol addiction centers use art therapy to help addicts examine their lives.
5. Art therapy is being used increasingly with physically and mentally handicapped people.
6. Art therapy is used most extensively in hospital psychiatric wards and psychiatric out-patient settings.
7. Patients may also participate in family art therapy.

8. Art therapy has expanded beyond clinical settings to educational institutions where therapists work with retarded, learning disabled, and emotionally disturbed children, as well as with socially disadvantaged children.
9. Art therapy is finding a place in education for "normal" children to foster personal expression and growth.
10. Adults are pursuing avenues of personal growth involving both self-exploration and creativity.

The group size for art therapy should be eight-to-ten members and they should meet in a comfortable setting or environment. Most sessions use two rooms--an art room and a regular, comfortable room where clients discuss what they have done. The sessions last about two-and-a-half hours. The first half-hour is for relaxing and establishing the day's theme. During the next forty-five minutes members use art materials. The remaining time is used to discuss the work just produced (Vogt & Vogt, 1983).

Described below is a sample session-to-session model of themes and exercises as used by Vogt and Vogt (1983) in working with adults:

I. First Session

A. Important for building trust.
B. Establish guidelines and rules.
C. Confidentiality is discussed.
D. Personal responsibility is discussed.
E. The focus is on the process not the art product.
F. Warm-up exercises are used to get clients to feel relaxed and less intimidated.
    1. Rapid gesture responses to such words as fear, anger, sadness, and joy.
    2. Expression of moods at that moment.
    3. Drawing with the unaccustomed hand to reduce control and fear.

II. Second Session

A. Acquaint group members with the power of art.

1. The use of an art medium* is used to stir up feelings and release tension.
2. Manipulation of the medium allows members to express how they feel at that moment.
3. They may be asked to remember an unresolved feeling and let that be represented through their art work.
4. After completing one form they are asked to complete an opposite emotion.

*The art medium may be magazines to cut objects out of to form a story about oneself, or it can be clay, paint and paper, etc.

B. There will be some difficulties with trust.

1. Some members may feel reluctant to discuss their unresolved feelings.
2. They may choose not to discuss their feelings.

III. Third, Fourth, and Fifth Session

A. Attempt to help each client view his/her life as a continuous process.

1. Ask questions--Where am I coming from? Where am I going? What's stopping me?
2. A way of looking at past, present, and future.

B. Attempt to work on relationship problems.

1. Draw or sculpture an ideal relationship.
2. Draw or sculpture feelings about sexual self.
3. Draw or sculpture a block to intimacy and communication.

IV. Sixth Session

A. Attempt to help clients visualize the future as they wish it to be.

1. Relaxation exercises are employed.
2. Asked to imagine a scene (such as exploring a house).
3. Asked to produce an artwork representing their experience.

V. Seventh Session

A. Clients are encouraged to focus on a continuing problem or issue.

B. Clients are encouraged to explore their strength to do something about it.

1. Visualize a person you dislike.
2. Name and draw the disliked qualities of that person.

VI. Eighth Session

A. Review the work of the preceding sessions.

B. Clients are encouraged to see what they have said to themselves through their art.

C. Clients are encouraged to ask what they want to do about it.
   1. Asked to make a final picture or sculpture.
   2. Guided imagery could be used.

D. Clients leave the last meeting with a sense of having personal resources and seeing possibilities for constructive action.

Career Decision Making

An important area for college students is deciding on a meaningful career. Many college freshmen, 40-50 percent according to ACT data, have questions about what career they should choose. Patricia Kirby (1979), from the National Center for Research in Vocational Education at the Ohio State University, indicates that for every career one prepares for there are five that one does not know about that will develop. Because of this, schools should teach "transfer skills" in addition to transferable skills. She makes a strong case that all individuals should be aware of learning styles so they can use this knowledge in transferring skills.

In group work with college populations on career decision making, a peer helper or counselor can use a technique that incorporates several learning style elements. Beginning with an imagery exercise, the group leader asks the participants to close their eyes and picture this scene:

> Imagine a time in the future--five years from today. You are approximately 25 years of age. You've just arrived at your job. Picture yourself at work. What are you doing? Are you with other people? What does it feel like in your surroundings? What are you thinking about? Spend a few minutes in silence imagining what your life is like.

After the exercise, the following activities are presented to process the imagery experience:

1. After paper is distributed to each group member, the leader asks, "Draw a picture of your fantasy, including as many people, things, and events as possible. Your picture might be a series of small drawings, not necessarily related."
2. Next, on the back of your paper write down a description of what you imagined. It is important to identify your feelings and thinking, rather than focus on writing style and form. You might choose to write down key words, such as "confused," "peaceful," "struggling accountant," or "overburdened father."
3. Let's roleplay several of your fantasies. Would one of you volunteer to explain your pictures and writings? (The leader identifies a member whose imagery includes other people and assigns roles to various group members to act out the scene.)

Next, the group leader directs discussion so as to involve group members in processing their fantasies and evaluating the group activities:

1. Which of the three activities (drawing, writing, roleplaying) did you find easiest? most difficult? (Visually oriented persons find the drawing preferable; auditory and tactual persons prefer the writing; while kinesthetically oriented persons prefer the roleplaying. Visually oriented persons generally find the imagery exercise helpful.)
2. Discuss your fantasy in terms of whether you were alone or with other people. Did there seem to be a "team atmosphere" or were people working independently of one another? (Responses frequently relate to the person's sociological preferences.)
3. Where were you in your mind's eye? Were you in a rural or urban area? Was the climate hot or cold? Was it noisy or quiet? Was the design formal or informal? (Responses relate frequently to the person's environmental preferences.)

A skilled group leader can use this exercise to clarify the values of group members and identify their aspirations, which relate to the area of career decision making. Skilled helpers can devise other interventions that provide for multisensory involvement during the helping process.

Counseling Mime

Richmond (1982) presented an extensive paper describing counseling mime as a therapeutic, cognitive focusing technique in career and life planning in which the mimes perform skits designed to heighten self-awareness, enhance communication, and enable viewers to cognitively restructure situations of psychosocial importance to them. Richmond goes on to point out that mime can be used for parents, young handicapped individuals, learning disabled youth, or counselors who want to cope with stress and burnout.

The key components of this technique include: (1) a group processor helps viewers become aware of their perceptions of the mime's behaviors, thoughts, feelings, and intentions; (2) the processor also assists viewers in deciding what they would do if they were in the mimed situation; (3) situations are structured to treat material in the lives of viewers; and (4) viewers are invited to restructure mimed situations in order to see their own situations from a different perspective. The use of mime in counseling is a potent tool that assists the client in achieving the counseling goals of becoming less defensive and more aware. Preliminary studies suggest that counselmime is most successful with children and recommend further research to fully evaluate its potentiality.

Counselmime is most effective for individuals who are peer oriented, tactile and kinesthetic and who need mobility. It is particularly useful for individuals who have difficulty expressing themselves verbally.

Psychodrama

Psychodrama has been defined as "a therapeutic process whereby the protagonist enacts dramatic events from his/her everyday life. Through this emotional process the protagonist gains insight into the roles that he plays which are effective and those that are ineffective" (Shearon, 1980, pp. 143-144).

Classical psychodrama begins with the warm-up phase. From this phase a protagonist is chosen on whom the group concentrates. Other subjects play auxiliary roles for the protagonist. The enactment phase follows with an emphasis on concretizing and maximizing the conflicts and feelings which lead to catharsis and insight. Reenactment means replaying the difficult scene and includes retraining for new effective roles. Following this phase is a sharing time when members have the opportunity to tell with whom they have identified and how they have dealt with similar problems.

Since psychodrama was first developed in the early 1900s, it has been used extensively with maladjusted children and youths and with "normal" children in the classroom. The method was designed to allow a person to enact his/her problem instead of just talking about it. Blatner (1973) stresses the effectiveness of this technique for those who have less capacity for intellectual and verbal exploration, as in the case with children. Yablonsky (1976) reports the effectiveness of psychodramatic techniques with older children and adolescents who have had behavior problems.

Psychodrama, then, can be an effective therapeutic group technique with individuals of all ages. It appears, however, that certain modifications in technique may prove beneficial depending on the age group one is working with.

Psychodrama is most helpful for individuals who do not have difficulty with authority figures, are peer oriented, learn auditorally, tactically and kinesthetically, and need mobility. Psychodrama is a very powerful technique when used by a skilled counselor in helping individuals deal with material that has previously been kept under the surface. Because individuals actually have to act out their defenses, it often makes the situation come alive in ways that verbal therapy does not allow.

CHAPTER III

COUNSELING INTERVENTIONS BASED ON LEARNING STYLES

Applying Learning Style Concepts in Preparing Human Services Students, College Peer Helpers, and Education Majors

A number of colleges and universities have developed two-year and four-year human services programs to prepare graduates to assume entry level positions in the helping professions. Additionally, a number of college counseling centers identify undergraduate students to assist in outreach programs by working as peer helpers in such areas as academic tutoring, co-facilitating workshops, and serving as resource persons in drug and alcohol abuse counseling. In preparing both human services students and college peer helpers, the knowledge and application of learning style approaches can be useful.

Learning Effective Communication Skills

Helpers need to be prepared in applying the fundamental skills of effective communication to work with clients. These skills include active listening, empathizing, attending, clarifying, reflecting feeling, and communicating an understanding of client needs and concerns. The application of learning style principles to the development of empathetic communication is discussed to illustrate the method for matching the helper's learning style preferences to the training method.

Empathy has been a major area of focus since Rogers (1957) identified this construct as one of the core conditions necessary for effective counseling or helping. Subsequent researchers, including Carkhuff (1969) who proposed a Human Relations Training System for preparing professional and paraprofessional helpers, have operationalized the construct of empathetic understanding by developing discrimination and communication scales to measure accurate empathy. However, there is little consideration given to gearing empathy training to trainee differences (Spiegel, 1985). Even where initial level empathy differences are determined among trainees, there is little explanation or attempt to adjust for

these differences; rather, there is an acceptance that some trainees learn at slower rates (Carkhuff, 1969).

The learning style model implies that the psychological elements are crucial in the development of helping skills such as empathetic understanding. Global versus analytic modes of processing and right versus left hemispheric preference are related to the development of empathy. Zenhausern (1978) provides the following descriptors for global processors and right hemispheric dominant persons:

- Playful and loose in experimenting and learning
- Responds with emotion and feeling
- Interprets body language easily
- Processes information subjectively
- Frequently uses metaphors and analogies
- Deals simultaneously with several problems at a time
- Creative, synthesizing, associating, and applying concepts in reading
- Intuitive in problem solving
- Uses images in remembering

In contrast, he identifies the following descriptors for analytic processors and left hemispheric dominant persons:

- Systematic and controlled in experimenting and learning
- Dependent upon words for meaning
- Produces logical ideas
- Little use of metaphors and analogies
- Deals with one problem at a time, sequentially
- Critical and analytical in reading
- Logical in problem solving
- Uses language in remembering

After identifying the hemispheric preference and processing mode of a group of human services students and peer counselors, the instructor needs to gear the training interventions to these individual differences. For example, in working with global processors and right hemispheric dominant students, the following techniques are suggested:

Use videotapes to demonstrate effective counselor communication skills in an intake interview.

Use live models to demonstrate effective helping skills through a helper-helpee script.

Divide the group into dyads in which one person reads prepared client statements and the other person identifies the feeling expressed and formulates a helping response.

Through the use of mime "act out" an emotional interaction between two people and encourage the observer to speculate about the situation.

Encourage the use of metaphors and analogies in identifying client concerns; for example, "The client views her role as a victim. It's as if she's in the center of a ring with ropes tied around her and people on the outer rim are pulling the ropes in all different directions."

In working with analytic processors and left hemispheric dominant students, the following techniques are suggested:

Use typescripts of helping interactions that demonstrate varying levels (from low to high) of helper functioning and have students rate the helper communication level.

Through the use of audiotapes of helper-helpee interaction, have students rate each helper response and generate dialogue that represents a higher level of helper response.

Assign readings in human relations skill development and have students outline the material and submit written abstracts.

Use computer programs such as DISCOVER (Harris, 1976), SIGI (Katz, 1980) and CHOICES (Shatkin, 1980) to demonstrate a logical, analytical approach to problem solving in the area of career decision making.

Within any group, there are students who do not have strong preferences on these psychological elements of learning style and, therefore, should respond effectively to either set of techniques described above.

Accommodating a Variety of Perceptual Preferences in Helping

A number of helping professionals are recognizing the importance of matching helper style and type of intervention to helpee style. The field of neurolinguistic programming (NLP) has developed around this concept. NLP is defined as "a new model of human communication and behavior that has been developed during the past four years by Richard Bandler, John Grindler, Leslie Cameron-Bandler, and

Judith De Lozier. NLP was developed initially through the systematic study of Virginia Satir, Milton Erickson, Fritz Pearls and other therapeutic wizards" (Harman & O'Neill, 1981, p. 449). The NLP model stresses the importance of the helper responding to the helpee's representational system, which is predominantly auditory, visual, or tactile/kinesthetic. Once the helper has identified the helpee's favored system and responded out of the system, feelings of trust and rapport increase. On the other hand, if the helper responds in a different system, the helpee experiences difficulty and often times appears resistant. For example, if the helpee's representational system or perceptual preference is visual, the helper might ask (Grindler & Bandler, 1976):

> "Do you have visual images in your head as you are talking and listening to me?"
>
> "Can you see what I am saying?"

If it is kinesthetic/tactile, the helper might ask"

> "Do you feel good about what you did?"
>
> "Are you in touch with what you are feeling right now?"

If it is auditory, the helper might ask:

> "I hear what you are saying."
>
> "As you recall the conversation with your friend, what was she really telling you?"

The learning style approach to accommodating a variety of perceputal preferences or representational systems of clients goes beyond responding verbally in the client's system. A study of longitudinal data on learning styles reveals that perceptual preferences are related to development. That is, tactual and kinesthetic modalities develop initially and are the primary preferences of pre-school and early elementary school youth, followed by the visual modality which becomes prominent during the fifth grade, and lastly the auditory modality, which is significantly stronger by the seventh grade (Price, 1980). In spite of these general developmental patterns, a variety of perceptual preferences are evident among college students and adults.

Due to the variety of perceptual preferences represented within any group, helpers need to develop interventions and strategies that accommodate a broad range of preferences.

Describing College Programs that Utilize Learning Style Approaches

Within most four-year colleges and universities there is little or no attention given to accommodating individual differences in learning styles within the classroom. With the exception of science, computer science, psychology and language laboratories, the typical college faculty use a lecture-discussion format of instruction. However, many Schools of Education use an experiential format of learning, which is more amenable to learning style differences. Finally, many community colleges and some four-year colleges have had to change their teaching approaches in order to accommodate increasing numbers of high-risk students who learn in non-traditional ways. Several colleges that incorporate a learning styles approach in teaching are described in this section.

In preparing undergraduate and graduate students to teach in elementary and secondary schools, Dr. Rita Dunn, Professor of Education and Human Services, St. John's University, New York, uses a learning styles approach. A series of three courses are offered on learning styles theory and techniques: (1) Diagnosing Students' Instructional Needs, (2) Individualization and Prescribing for Pupil Learning Needs, and (3) Research and Development in Innovative Instructional Strategies. The courses are taught experientially using a variety of instructional strategies that complement a broad range of learning styles. One course syllabus is presented in outline form with the course description, objectives, activities, and tasks.

Course Title and Description: Education 7701, Research and Development in Innovative Instructional Strategies

Course Objectives:

1. Students will be able to identify each of the five (5) stimuli of learning style and the twenty-one (21) elements related to them, indicating which are biologically, and which are experientially, imposed.

2. Students will be able to describe the learning style models of at least four (4) of the following pioneers: (a) Canfield; (b) Gregorc; (c) Hart; (d) Hill; (e) Hunt; (f) Kolb; (g) Ramirez and Castaneda; or (h) Schmeck. They will list the element(s) each examined, the populations for which their tests are designed, an interesting fact about each researcher, and how their models were different from and similar to the Dunn's paradigm.

3. Students will be able to describe at least one (1) research study that corroborates the importance of each element. In addition, they will identify a single element of their choice and describe at least three (3) studies that document its contribution to academic achievement.

4. Students will identify instruments that diagnose the learning style characteristics of: (a) adults; (b) primary youngsters; and (c) students in grades 3-12.

5. Students will develop the skills for redesigning an instructional environment that responds to diversified styles. They will document the research basis for repositioning furniture and controlling illumination, sound, temperature, and mobility.

6. Students will be able to identify their own learning and teaching styles and describe the similarities and differences between the two.

7. Students will be able to describe how they should do their homework through their learning style characteristics.

8. Students will be able to cite the: (a) researcher; (b) element studied; (c) population's grade level; (d) university where the study was conducted; (e) date; and (f) results of at least five (5) investigations that demonstrate significantly improved:

   - academic achievment;

   - attitudes toward learning;

   - discipline that resulted from teaching students through their individual learning styles.

9. Students will be able to explain why selected methods appear to respond to selected learning style characteristics and prescribe for their own students based on their identified traits.

10. Students will be able to explain the findings of the National Task Force on Learning Styles (which examined all the major models) and its developing new model.

11. Students will conduct a pilot research study of their own to contribute to their knowledge of their own students and classes. They might consider:

    - identifying their pupils' styles and then matching and mismatching selected materials;

    - examining the similarities and differences among their family members' styles, e.g., husbands and wives, parents and offspring, siblings, grandparents vs. grandchildren, or intergenerational styles;

    - the effects of only altering the instructional environment to respond to their pupils' styles;

- the effects of their doing homework through their styles, or

- the styles of selected populations, such as selected cultural groups, the gifted, underachievers, the aged, adults in their forties, etc., or the styles of selected professional or work groups, such as telephone operators, nurses, etc.

Activities and Reporting Alternatives:

Activity Alternatives	Reporting Alternatives
1. Students will locate at least three (3) 1985/1986 doctoral dissertations not previously reported in the Learning Styles NETWORK Newsletter. They will synthesize each into a single paragraph in Newsletter page 3 style and include author, date, university, population, instruments, model, findings, and implications for schools. DUPLICATIONS ARE UNACCEPTABLE.	1. They will submit three reviews to Dr. Dunn by the first class period in December. The report must be typed, double-spaced, and in NETWORK Newsletter page 3 style. Extra credit will be given if they write for, and obtain, a black and white, glossy "head" photograph of the author of the study.
2. Students will conduct the research study of their choice. They may work alone, in a pair, or with a team of three. Use dissertation style.	2. They will submit mini-chapters 1, 2, and 3 to Dr. Dunn by the third session before the end of the semester.
3. They will develop a CAP and a PLS on how to redesign the instructional environment based on individual styles.	3. They will submit them to Dr. Dunn during the third week in November.
4. They will form a group and develop a booklet that describes, on a single page for each, the growth of research and understanding in the area of learning style. For example, they may develop one page on Sound, or Light, or, if they prefer, one page on each study related to each element. They can secure photographs of either the researchers or the university in which the studies were conducted. They may use a quotation near the photo, or use a picture of students responding to the concept of the element.	4. They will submit it to Dr. Dunn by the session before the last of the semester.

5. Students will write an article for publication in a journal of their choice describing how to respond to selected learning style elements. They may vary the focus if they prefer, but must clear their change with Dr. Dunn.	5. They will submit the paper for publication after it has been corrected and retyped.
6. Students will develop a paper that synthesizes the research on learning styles or one which describes how the various models relate to each other.	6. They may share their paper with a small group at one of our sessions.
7. Students will interview at least four learning style pioneers and develop a short paper describing their current views of the theory (theirs and others).	7. They may submit the material to Dr. Dunn by the session before the last of the semester.

Directions for Completing Above Tasks:

Students may work either alone, with one classmate, or with a small team. If they choose to work with others, they should anticipate a group grade.

Activities #1, 2, and 5 must be completed. They then may choose any other to complete their Activity requirements for this semester. All materials submitted to Dr. Dunn must be typewritten, well-proofed, edited, and grammatically and spelling-correct. Points will be subtracted for unedited papers and errors.

Required Readings

1. Dunn, R., and Dunn, K. (1978). Teaching students through their learning styles: A practical approach. Englewood Cliffs, New Jersey: Prentice-Hall, Inc.

2. (1985) Articles and books. New York: Learning Styles Network. $30.00.

3. Learning Styles NETWORK Newsletter. Current and back issues (1980-1985). New York: Learning Styles NETWORK.

4. (1982) Learning style and brain behavior. Reston, Virginia: National Association of Secondary School Principals.

College classroom activities consist of a variety of teaching approaches, including demonstrating the use of multi-sensory packages, circle of knowledge, and developing tactual-kinesthetic materials for use at various grade levels.

Personality Type and Learning Styles

Learning styles have been defined in different ways and some researchers have linked personality types and learning styles. For example, The Myers-Briggs Type Indicator (MBTI) (Briggs & Myers, 1977) identifies 16 personality types, based on different combinations of four bipolar constructs, including extroversion versus introversion, sensing versus intuition, thinking versus feeling, and judging versus perceiving. Lawrence (1984) reviews the MBTI in relation to learning styles as follows:

> Cognitive style denotes the preferred or habitual patterns of mental functioning, including information processing, formation of ideas and judgments.
>
> Patterns of attitudes and interests influence what a person will attend to in a potential learning situation.
>
> Individuals seek out learning environments compatible with their cognitive style, attitudes, and interests, and they avoid environments that are not congenial.
>
> Similarly, individuals have a disposition to use certain learning tools and avoid others.

Perceptual preference, as measured by the sensing versus intuitive bipolar construct, appears to be similar to conceptual level. The Myers-Briggs theoretical description of intuitive types is:

> Intuitive types use sensing and intuition, but prefer and therefore develop intuition. With good type development, intuition provides insight into complexity, an ability to see abstract, symbolic and theoretical relationships, and a capacity to see future possibilities, often creative ones.
>
> Attitudes characteristically developed as a result of a preference for intuition include a reliance on inspiration rather than on past experience, an interest in the new and untried, and a preference for learning new materials through an intuitive grasp of meanings and relationships. To most intuitive types, 'real intelligence' is shown by insight in grasping complexities and flashes of imagination or creativity.
>
> Intuitive types are attracted to careers and settings where it is more important to find the pattern in complex systems than it is to deal with the practical details; where creating new knowledge is more important than applying existing knowledge, where working with

> theory and imagination is more important than dealing with tangibles, and where intellectual challenge is more important than the enjoyment of the pleasures of everyday events. (Lawrence, 1979, pp. 7-8)

In contrast, the theoretical description of sensing types is:

> Sensing types use sensing and intuition, but prefer, and therefore develop sensing. With good type development the expertise in sensing can lead to a differentiated awareness of present experience, acute powers of observation, a memory for facts and detail, and a capacity for realism, for seeing the world as it is. Attitudes characteristically developed as a consequence of a preference for sensing include a reliance on experience rather than theory, a trust of the conventional and customary way of doing things, a preference for beginning with what is known and real, and then moving systematically, step by step, tying each new fact to past experience and testing it for its relevance in practical use. To most sensing types, 'real intelligence' is characterized by soundness, accuracy and common sense.
>
> Sensing types are attracted to careers and settings where skillful application of well-learned knowledge is more important than developing new solutions; where working with tangibles is more important than using theory and insight; and where dealing with the immediate situation and using conventional wisdom is more important than making bold new breakthroughs. (Lawrence, 1979, p. 7)

A team of research-practitioners at Ball State University matched sensing and intuitive types with selected instructional strategies and student support services (Nisbet, Rable, & Schurr, 1981). They used the MBTI as a diagnostic tool with high-risk students and found that attrition was reduced from 28 percent to nine percent after first using a program that included informing these students of their MBTI type with an interpretation in the context of learning. Other positive outcomes included improved educational decision making (academic and career) and work toward a healthy balancing of learning behaviors. The authors developed profiles for various learning styles that enabled them to involve support services and academic departments to work with the high-risk students in specific ways outlined in the profiles.

When the authors looked at the sensing-intuitive scale in reference to learning style they made these discoveries:

Sensing types had high performance for concrete thinking and for sensory learning modes; were neither adept in dealing with analogies, recognizing and interpreting figurative and symbolic language, nor skilled in recognizing relationships and establishing alternatives. These students quickly learned the concept by

definition, but had difficulty applying the concept in any context beyond the original definitional model. They also had difficulty creating their own examples or picture-models of abstract concepts or principles. Therefore, it was necessary to set strategies that would help these students acquire facilities beyond the concrete sensory learning behaviors. They did this with the assistance of the English Department, the Foreign Language Department, and individual sessions conducted by the two Ball State psychometrists and their graduate assistants.

On the other hand, those who were predisposed to intuition were assisted primarily by adjusting their quarterly schedules to include at least one course and teacher who responded to these preferences. In addition, they were assisted to be more accepting of concrete, traditional classroom instruction and test taking by small group workshops (Nisbet, Rable, & Schurr, 1981).

While their data are impressionistic, of a case-study nature, and without adequate controls, the researchers did work with a large number of students and observed direct results with the application of a learning style theory.

Residence Hall Programs

One of the challenges confronting residence hall directors is that of assigning roommates within the dormitories or residential apartments on campus. In a review of the literature on roommate compatibility in a residence hall, Lapidus, Green, and Baruh (1985) conclude that there has been relatively little success in discovering personality, values, background, and interest factors that are clearly correlated with roommate compatibility.

Residence hall counselors frequently hear a barrage of complaints early in the year that attest to roommate incompatibility, followed by requests for room changes. Common complaints are as follows:

> "He studies with the radio on and I can't concentrate."
>
> "She works on calculus with her close friends and I can't learn that way--I have to study independently."
>
> "He gets up at 6 a.m. to study and I need my sleep. My most productive time is after midnight but he wants lights out then."

"I need a cool room to stay alert and my roommate keeps pushing the thermostat up into the high 70s and I get groggy."

Lapidus et al. (1985) assert that one promising approach to solving the problem of choosing variables that influence compatibility is to focus on factors clearly tied to the behavior occurring in the room. For example, research on habits has suggested that conflicts over bedtime, neatness, smoking, studying, room uses, and noise are found more often among dissatisfied roommates than among satisfied ones. Productivity Environmental Preference Survey results of residence hall students might be used by counselors in two ways. If the PEPS is mailed to residents prior to their arrival on campus, the survey can be used to match prospective roommates on key elements, including sound, light, warmth, formal design, structure, sociological preferences, intake, mobility, and time of day preferences. Secondly, the PEPS results can be used as a counseling tool to help roommates identify their areas of incompatibility and mediate differences. For example, the person who needs quiet and formal design might find a library carrel more conducive to studying than the dormitory.

Conducting Study Skills Workshops

There is evidence that many students arrive at college with deficient study skills. A report of the National Commission on Excellence in Education (1983) concluded that in most schools, the teaching of study skills is haphazard and unplanned. To illustrate how workshops can be conducted using a learning styles approach, both content and process issues will be discussed.

The process used in the workshops should reflect the learning style preferences of participants. Environmental stimuli can be accommodated by providing quiet or background music, strong or dim lighting, warm or cool temperatures, and formal or informal design. Participants' sociological preferences can be accommodated during the workshop by providing for individual tasks, group projects, or counselor-led activities which involve varying degrees of structure. If group members are analytic and left brain dominant, inductive approaches should be used, while global, right brain dominant members respond better to deductive approaches. Perceptual preferences can be accommodated through using a variety

of instructional techniques, including auditory approaches, filmstrips, videotapes, and "hands-on" activities. Finally, participants' requirements for intake and time can be provided for by permitting smoking or snacking during the workshops and scheduling the workshops during the morning, afternoon, and evening hours.

The content of the workshops should vary according to participants' needs. The overall objectives of the workshops are as follows:

1. To assess individual learning style requirements and interpret individual profiles in terms of studying and learning.
2. To survey participants' needs in relation to skill areas--e.g., time management, notetaking, and test taking--and develop the content of the workshops in these areas.
3. To evaluate participant change after the workshops through skills assessment and/or grade-point-average.

Counselors will find that academically competent college students are aware of their learning style preferences, make accommodations for these preferences during the learning process, and assume responsibility for their own learning. Conversely, high-risk college students are frequently unfamiliar with their learning style requirements and tend to shift responsibility for their failure to learn to professors or other external sources. The content of study skills workshops is outlined in the areas of (1) study habits and time management, (2) listening, (3) notetaking, (4) reading, (5) writing, (6) problem solving, and (7) test taking.

Study Habits and Time Management. An assessment of learning style provides students with the following information: (1) sound requirements during study periods; (2) light and temperature preferences; (3) need for formal versus informal design; (4) optimal degree of structure needed in task completion; (5) preference for studying independently, in groups with peers, or under adult-supervised conditions; (6) identification of perceptual preference for auditory versus visual versus tactual versus kinesthetic modalities; (7) degree of mobility required; (8) intake preferences; (9) optimal time of day; and (10) preference for global versus analytic modes of processing. Students should be encouraged to discuss the implications of their learning style in terms of creating a study environment in their dormitory or residences that complements these preferences.

An additional technique that is helpful in analyzing students' study habits and identifying distractions that impede learning is to administer the Study Distractions Analysis Scale. The counseling center at St. John's University uses this scale in study skills workshops to facilitate change by identifying major impediments to learning. The scale is provided below.

STUDY DISTRACTIONS ANALYSIS

List three places where you usually study in the order you most use them:

A _____ B _____ C _____

Now check the column that applies to each of these places.

(T = True, F = False)

		Place A	Place B	Place C
1.	Other people often interrupt me when I study here.	T F	T F	T F
2.	Much of what I can see here reminds me of things that don't have anything to do with studying.	T F	T F	T F
3.	I often hear radio or TV when I study here.	T F	T F	T F
4.	I can often hear the phone ringing when I study here.	T F	T F	T F
5.	I think I take too many breaks when I study here.	T F	T F	T F
6.	I seem to be especially bothered by distractions here.	T F	T F	T F
7.	I usually don't study here at a regular time each week.	T F	T F	T F
8.	My breaks tend to be too long when I study here.	T F	T F	T F
9.	I tend to start conversations with people when I study here.	T F	T F	T F

10.	I spend time on the phone here that I should be using for study.	T	F	T	F	T F
11.	There are many things here that don't have anything to do with study or schoolwork.	T	F	T	F	T F
12.	Temperature conditions here are not very good for studying.	T	F	T	F	T F
13.	Chairs, table, and lighting arrangements here are not very helpful for studying.	T	F	T	F	T F
14.	When I study here, I often am distracted by certain individuals.	T	F	T	F	T F
15.	Here I have a place that I can use for study and for nothing but study.	T	F	T	F	T F

Now total the checks in each column. The column which has the most "true" checks may be the poorest place to study.

HOW DO YOU RATE IN STUDY HABITS? Always, Sometimes, Never

1.	I plan definite time and place for study.	A	S	N
2.	I know exactly what the assignment is.	A	S	N
3.	I assemble all materials I'll need before I I start to study.	A	S	N
4.	I use correct posture and lighting.	A	S	N
5.	I avoid disturbances.	A	S	N
6.	I know how to concentrate.	A	S	N
7.	I think over subjects so I'll know how to proceed.	A	S	N
8.	I look for main points of the lesson.	A	S	N
9.	I try not to daydream.	A	S	N
10.	I try not to waste time.	A	S	N
11.	I stay on my lesson until I finish it.	A	S	N
12.	Before I stop studying, I close my eyes and try to remember main points of the lesson.	A	S	N
13.	If I can't remember these main points I look for them again.	A	S	N

Use of time is another area that needs to be reviewed. Students should be encouraged to analyze their use of time by developing schedules that chart time spent in attending classes, studying, socializing, working, personal care, eating, and sleeping. These charts should be reviewed in counseling to determine if discrepancies exist between "real" time commitments and "ideal" use of time. Setting

priorities and avoiding procrastination are other areas that need to be addressed and frequently are related to students' fear of failure.

Listening. In college classrooms the majority of time is spent in students listening to lectures. Students need to develop the skill of active listening, which involves keeping attention focused on what the speaker is saying and making connections with previous knowledge. Blocks to effective listening include an inability to concentrate, focusing on one's own agenda rather than being attentive to the speaker, and an inability to block out distractions.

In study skills workshops, students can learn the skills of active listening through the following small group techniques:

> Group members can focus on one member for a 15-minute period and note nonverbal behavior (body language, facial expressions, change in tone of voice, etc.) to identify the emotional as well as the cognitive content of the message.
>
> By listening to a videotaped lecture, students can work as a group on (1) clarifying what the speaker has said by rephrasing the thoughts and ideas; (2) analyzing the content of the message by identifying the major themes; (3) raising questions to explore deeper levels of the issue or topic; and (4) summarizing the main ideas using verbal "shorthand."
>
> A group session can be spent on having each member of the group summarize what a previous member has said before expounding a new idea or message.

Listening is a fundamental skill that is the benchmark of successful students. It is an acquired skill that can be developed through workshop activities.

Notetaking. The use of cassette tape recorders is a helpful technique for use with lecture-discussion content that is technical. Used in conjunction with notetaking, tape recording is an effective learning device, particularly for students who are auditory in terms of perceptual preference. The Cornell Study Center identifies five basic processes of effective notetaking, termed the 5 R's:

> Record--the main ideas or themes.
>
> Reduce--the material by summarizing and noting key terms.
>
> Recite--the key ideas to oneself.
>
> Reflect--and think about the content.
>
> Review--the material through recall.

For students who are tactually oriented, it is helpful to reorganize and recopy notes after class. When notes are written in the student's own words, the task demands a cognitive reworking of the information that aids memory. Studying notes is an excellent way to review for a test.

Workshop activities can be developed that focus on various skills associated with effective notetaking. For example, in sharpening the ability to recall information through organizing notes, the following exercise might be used:

> Hand students a sheet of blank paper, with seemingly unrelated ideas or statements on the reverse side. Ask them to turn it over and study the content for 30 seconds. Then for memory, ask them to write down what they can remember. Next, re-do the task, using different ideas and statements organized by categories in outline form. After allowing the same time period for study, ask them to recall the content.

Generally, students will recall significantly more content after the second exercise. Similar activities can be developed to hone skills in recording, reciting, and reflecting content.

Reading. Underlining, outlining, highlighting, and summarizing are all methods of focusing attention and increasing understanding of written material. The SQ3R method enhances the processing of information and involves five steps: (1) Survey--glance at chapter headings, read titles and subtitles, determine organizational patterns, read summaries; (2) Question--formulate initial questions about each section to focus further reading; (3) Read--actively search for answers to the questions formulated previously; (4) Recite--answer questions independently, without reference to the text; and (5) Review--list major facts, ideas, concepts under each heading. Additional guidelines that help students acquire proficiency in reading are as follows:

> Identify the learning style elements that enhance concentration; e.g., presence or absence of noise, strong versus dim lighting, time of day preferences, temperature requirements, sociological preferences, and design requirements.
>
> Underline important facts, ideas, or themes.
>
> Take notes on the reading materials, using symbols, acronyms, diagrams, and outlines.
>
> Engage in speed reading to survey the overall content.

Learn to read critically, separating knowledge from opinion, identifying the author's perspective, and determining extent of agreement/disagreement.

Writing. Writing assignments at the college level can vary from creative writing and theme writing, to developing abstracts of books or journal articles, to term papers and research writing. University library faculty members should be involved as workshop resource persons to familiarize students with major indexes, microfilm, inter-library loans, computer searches, and style manuals and format.

The process of writing themes, essays, term papers and reports involves: (1) selecting a topic; (2) deciding on the audience; (3) determining the purpose of writing, i.e., informative, persuasive, entertaining; (4) developing questions; (5) researching the topic; (6) developing the outline; (7) keying research notes to the outline; (8) beginning writing; (9) setting aside the paper and evaluating later; (10) soliciting the help of a colleague in critiquing the paper; and (11) rewriting the paper based on the review and evaluation.

Writing is a fundamental aspect of the college experience and many institutions require a freshman English course that facilitates the development of the skills and critical thinking ability that contribute toward effective writing.

Problem Solving. College students are constantly making choices, decisions, and resolving problems. Decisions may range from relatively minor ones, such as whether or not to spend the weekend skiing in Vermont, to major ones, such as career choice. Regardless of the complexity of the decision, students basically employ the same problem solving skills, including: (1) identifying the problem; (2) analyzing the components of the problem; (3) generating solutions to the problem or identifying alternatives; (4) weighing the pros and cons of each alternative; (5) deciding on a course of action or solution; (6) implementing the decision; and (7) evaluating the decision in retrospect.

Creative problem solving involves reframing the problem or viewing the problem in an entirely different context. Generally a period of incubation or a rest from actively thinking about the problem facilitates illumination or insight into problem resolution.

Test Taking. Frequently college students seek out the counseling center to deal with test anxiety, which has both affective and cognitive components. Students need to be knowledgeable about test taking, as well as about the content within the discipline area, for maximum achievement and minimum anxiety. Some of the skills that enhance the mastery of tests are as follows:

Preparing for the test through frequent and organized study, adequate rest and diet, and concentrating by blocking out distractions. Study during optimal energy time-of-day periods.

Developing skills in taking objective and subjective examinations. For example, in multiple choice type questions, understand the stem statement, look for patterns or analogies, and eliminate questionable responses. In subjective examinations, develop a comprehensive outline, allow enough time for the writing process, and write paragraphs that are coherent and smooth, using examples or illustrations to support major concepts.

Developing test sophistication in following directions, scanning, pacing, and reviewing questionable responses.

Learning from examinations; i.e., analyzing the incorrect items and determining reasons for errors as well as classifying errors as to type.

Managing text anxiety, including replacing negative self-statements with positive ones, building confidence by planning for success, and using relaxation techniques.

An excellent resource for college counselors who conduct study skills workshops is The College Study Skills Program: Level III (Fitzpatrick, 1982), available through the National Association of Secondary School Principals. The complete kit includes an instructor's guide, a student text, and sample units.

In short, the study skills workshops can be developed to complement students' learning style preferences in concert with providing for skill acquisition in specific areas.

This chapter summarized various applications of learning styles in student personnel programs at the university level. These applications and a variety of others can be used to facilitate the implementation of learning styles to make a practical difference in students' lives in planning their studying and living environment within the residence hall system. It is hoped that these sample strategies can be used as the basis for developing other such strategies and applications at the college level.

CHAPTER IV

RESEARCH ON COUNSELING AND LEARNING STYLES

Colleges need to be accountable. In recent years the demand for accountability has increased, and college counselors and faculty members are expected to be able to furnish evidence of accomplishments and gains in order to ensure support and meet the demands of accrediting associations. To be accountable means to be responsible--responsible for relevant data-based goals, cost-efficient and -effective procedures, and measurable outcomes (Gibson, Mitchell, & Higgins, 1983). Accountability should begin with a review of the literature in the areas of teaching, counseling, and learning to determine which approaches work in practice.

In this chapter the research on learning styles in the areas of teaching, counseling and learning is reviewed. An additional resource for securing up-to-date research on learning styles is the Center for the Study of Learning and Teaching Styles, co-sponsored by the National Association of Secondary School Principals and St. John's University (Jamaica, New York 11439). The Center sponsors a national network of institutions interested in learning styles, publishes a newsletter on current practices, designs inservice workshops for teachers, counselors, and administrators on learning styles, and assists graduate students and practitioners in the design of research on learning styles.

Guidelines in Selecting Learning Style Instruments for Conducting Research

Counselors assess learning style in order to make better decisions about program (or curriculum) development and instruction as well as to counsel individuals about problems, strengths, and opportunities. Learning style assessment is carried out through observation (watching the student in action), by interview (asking the student about preferred ways of learning and learning environments), and by administration of instruments.

There are several basic issues to consider when selecting instruments to diagnose learning and cognitive styles. The first concern is reliability. Does the instrument measure consistently what it purports to measure? Can one administer the instrument to the same group at two different times and obtain the same results (test-retest reliability)? The difficulty with this method for determining reliability is that certain environmental preferences seem to change with individuals across time. Dunn, Dunn, and Price (1985) have found, for instance, that the younger the students, the greater the preference for learning through their tactile and kinesthetic sense, while older students prefer learning through auditory and visual senses. Preference for food intake while learning seems to follow the growth curve for females. Females tend to become less motivated than males after grade ten--probably a reflection of socialization processes. One cannot determine from the research to date why changes occur. We have found stability from grades three through five, considerable fluctuation in some areas between grades six and nine, and more stability after grade ten. In addition, there do not seem to be major differences on test-retest reliabilities that are six to eight months apart.

Another type of reliability is internal consistency. Do the individual items perform consistently within an individual scale? Do individuals scoring high or low in an area respond consistently to other items in that same area? Do the items consistently discriminate between those scoring high on the scale and those scoring low on the scale? This type of reliability is not subject to test-retest variations that result from changes within the subjects.

The next area dealing with instrument selection is validity. Does the instrument actually measure what it purports to measure? Has the instrument been developed from a sound empirical and theoretical base and on valid statistical procedures? Do the results account for known differences? Are the scales within an instrument independent? Are the intercorrelations high? If the intercorrelations are high, it suggests that the areas the scales are measuring are not independent from each other and that information from one scale also provides information from another scale. If one wants to do statistical comparisons with correlated scales, this difficulty might lead to differences that were not unique if one compared the scales in a pair-wise fashion rather than using a multivariate procedure that examined all of the variables simultaneously. Do instruments that purport to measure the same areas have similiar results?

One should determine if a manual is available from the publisher that summarizes instrument development and the results of research in settings and with populations similar to that with which one will be using the instrument.

There are several reviews and evaluations of instruments; e.g., Kirby (1979) and Blakemore, McCray, and Coker (1984). In addition, several developers of instruments summarize their research and present theoretical rationales in the book edited by Keefe (1979).

Correlational Studies with College Students

Correlational studies using the Productivity Environmental Preference Survey (Price, Dunn, & Dunn, 1982) with college students have been conducted to determine if learning styles correlate with other variables, such as hemisphericity, achievement, field dependence versus field independence, and global versus analytic cognitive style.

A study of 41 young adults' productivity style, measured by the PEPS, was correlated with cerebral dominance, measured by the Revised Dominance Scale (Zenhausern, 1978). A regression analysis revealed that left dominant persons preferred mobility, sound, formal design, varied learning sociological patterns, were persistent, motivated and visually oriented. Additionally, they had low preferences for intake, light, structure, a warm environment, learning alone and in late morning, and were not kinesthetically oriented. In contrast, right dominant persons were less motivated and rejected learning with peers. There were several variables that overlapped with left dominance, including a preference for mobility, learning in several ways, persistence, formal design, and visually oriented. Based on the regression analysis, individuals with high scores on left cerebral dominance were more complex in terms of their relationship to productivity styles in that their styles were defined by more variables.

In a study by Price (Price, Dunn, & Dunn, 1982) of 148 undergraduate students, productivity style was correlated with grade-point-average. Elements most predictive of students with high grade-point-averages were preferences for mobility and high responsibility. These students also preferred to learn in the early morning, were peer-oriented and learned in several ways, had auditory preferences but did not have kinesthetic preferences.

Using the Witkin (1971) Embedded Figures Test, 41 young adults in a study by Price (Price, Dunn, & Dunn, 1982) were classified as field independent, field dependent, or undifferentiated. Productivity style elements that differentiated among these groups included design, mobility, responsibility, learning alone, and learning with peers. Field independent persons preferred formal design, high mobility, responsibility, and rejected learning alone, while field dependent persons preferred low mobility, less responsibility, learning alone and with peers. Undifferentiated persons preferred informal design, learning alone rather than with peers, and were less responsible.

Sigel's Cognitive Style Test (1967) was used with 41 young adults in a study by Price (Price, Dunn & Dunn, 1982) to identify productivity style elements that discriminated between global versus analytic types. Global persons had high preferences for light, motivation, learning in the late morning or afternoon, learning alone, and informal design. They were low in persistence, mobility, authority orientation, and learning in varied ways.

Finally, a study by Price (Price, Dunn, & Dunn, 1982) was conducted to compare the productivity styles of 251 undergraduate college students, 29 senior scholars over the age of 65 and enrolled in college classes for credit, and 30 randomly selected elderly persons living in the community. Results revealed that the undergraduates had high preference for structure, motivation, auditory, kinesthetic learning, afternoon, intake, and informal design. The senior scholars preferred formal design, morning, no intake, and were not auditorally or kinesthetically oriented. The elderly living in the community preferred formal design and learning in the morning; they were low in preference for structure and motivation. These correlational studies reveal a relationship between some elements of learning style and constructs such as hemisphericity, field independence-field dependence, and cognitive style. This condition suggests that to a limited extent these constructs are measuring some of the same dynamics in individuals. In future research there is a need to factor-out these areas of commonality more rigorously.

Matching the Learning Styles of College Students with Teaching Style or Instructional Methods

A review of the literature in the area of accommodating the learning style preferences of college students with complementary teaching styles or instructional methods reveals the following patterns: (1) college students are able to predict the learning style modalities in which they learn best (Farr, 1971); (2) when college students enter a learning situation with a preconceived notion of what teaching styles are best for them, academic achievement is greater in the perceived congruent teaching environment than in the incongruent environment (Brown, 1976); and (3) when the learning style preferences of college students are accommodated through complementary teaching styles, instructional approaches, or resources, (a) significant improvement occurs in academic achievement (Adams, 1983; Domino, 1971; Farr, 1971; Napolitano, 1985; Robertson, 1977); (b) better attitudes toward learning are evidenced (Napolitano, 1985); and (c) decreased college attrition (Adams, 1983) results in comparison with students whose learning style preferences are mismatched.

Using college students as subjects, Farr (1971) experimentally tested the hypothesis that, for two particular types of meaningful verbal learning, an individual would be able to predict accurately how well she/he would learn as a function of either the aural-presentation or print-presentation medium. Results obtained confirmed, beyond the .01 level of significance, that for both kinds of material employed in teaching a foreign language, individuals were able to predict successfully the modality (visual or auditory) in which they would demonstrate superior learning performance.

Brown (1976) conducted a study to measure undergraduate education majors' perception of their learning requirements in relation to what teaching styles were best for them. He found that the greater the congruency between perceived learning styles and perceived teaching styles, the higher the learning. He offered several explanations for these findings. Primarily, consistency theories (Zajone, 1960) contend that dissonance is a noxious state that an individual avoids. Congruency between learning style and teaching style may form a consonant environment, which enhances learning. Also plausible is the possibility that extra effort is exerted by learners if they are reinforced by a preferred teaching style.

Table 5 summarizes the research studies on college teaching through learning styles that have resulted in significant increases in academic achievement and/or other positive outcomes.

Additionally, there are two studies with college students on learning styles and teaching methodology that indicated no significant results. Coop (1968) conducted a study with college undergraduates and found no significant interaction between cognitive style and teaching method in terms of student achievement. Instead he found that students taught in the teacher-structured presentation method were significantly superior to students taught in the independent, problem solving method in regard to achievement. Raines (1976) investigated the relationship between learning and teaching styles and found a direct relationship between lecture and discussion teacher styles and the highest grade-achievement college group. He concluded that for the low achievement groups, alternative strategies need to be designed.

Utilizing Learning Style Approaches in Teacher Inservice

In the past decade the importance of teaching students through their individual learning styles has been recognized by educators. Through inservice workshops, participation at educational conferences, and articles in professional journals, teachers have been encouraged to match students' individual learning styles to consonant instructional methods in order to increase student achievement. Kulp (1982) describes the processes used in developing and implementing a teacher training program based on the Dunns' concept of learning styles in order to guide, correct, and evaluate training procedures. Seventeen public school teachers participated in a 15-hour learning styles workshop and acquired the skills necessary to implement the learning styles concept within their classrooms.

Table 6 summarizes the research on learning style approaches in teacher inservice. These studies reveal the following patterns: (1) teachers can acquire and implement effectively the skills needed to match instructional environments to student learning style preferences; (2) teacher inservice workshops, resulting in using consonant instructional approaches with pupils' learning styles, show evidence of increased pupil academic achievement; and (3) workshop schedules matched to teachers' learning style preferences resulted in teachers returning to their classes

Table 5

Research on College Teaching Through Learning Styles in Relation to Academic Achievement

Researcher, Title, Institution	Population	Findings
Adams, J. F. (1983). The effects of the satisfaction of learning style preference on achievement, attrition, and attitude of Palm Beach Junior College students. Ed.D. dissertation, Florida Atlantic University.	Community college students enrolled in English, reading, and science courses.	1. Within academic areas correlational differences were significant for two groups: independent teacher-paced science learners and lecture-laboratory English-reading learners. 2. Satisfaction of learning experience had a more favorable educational rather than statistical effect: better grade percentages and much less attrition for satisfied students than non-satisfied students. 3. Results support the worth of using the LSI to match students with teachers for greater effectiveness.
Ballard, F. B. (1980). The effect of leadership styles and learning styles on student achievement in a basic business course at Florida Junior College at Jacksonville. Ph.D. disseration, Florida State University.	Junior college students in management courses.	1. Students whose learning style was identified as Accommodator, Diverger, Assimilator, or Converger achieved at approximately the same rate. 2. The match of the Converger and Assimilator student learning style with the S-I leadership style showed a significant effect on student achievement. 3. There was a significant effect on student achievement within all four learning styles when taught by the S-Z leader.

Researcher, Title, Institution	Population	Findings
Cupkie, L. F. (1980). The effects of similarity of instructor preferred teaching style and student preferred learning style on achievement in selected courses in a metropolitan community college. Ph.D. dissertation, University of Missouri-Kansas City.	Community college students enrolled in English and Mathematics courses.	1. Matching 16 learning styles with 16 teaching styles, there was not general support for similarity resulting in higher achievement level. 2. Mixed results were obtained on the instructor, organization, and direct experience learning environment preference scales for instructors and students.
Domino, G. (1971). Interactive effects of achievement orientation and teaching style on academic achievement. Journal of Educational Psychology, 62, 427-431.	College freshmen enrolled in psychology courses.	Students taught in a manner consonant with their achievement orientation, compared to their peers taught in a dissonant manner, obtained: 1. Significantly higher mean scores on course examinations, both objective and subjective types. 2. Significantly higher course grades and overall grade-point-averages.
Farr, B. J. (1971). Individual differences in learning: Predicting one's more effective learning modality. Ph.D. disseration, Catholic University of America.	College students enrolled in foreign courses.	1. Individuals accurately predicted the modality (visual versus auditory) in which they would achieve performance. 2. It was advantageous to learn and be tested in the preferred modality. 3. The advantage was reduced when learning and testing were in the non-preferred modality.
Lyne, N. A. (1979). The relationship between adult students' level of cognitive development and their preference for learning format. Ph.D. dissertation, University of Maryland.	Older adult college students.	In an investigation of the relationship between cognitive stage level and learning format preference for high versus low structure, findings were:

Researcher, Title, Institution	Population	Findings
Lyne (Cont.)		1. There is minimal support for a positive relationship between cognitive style and learning format preference. 2. Adults and traditional college students are similar with respect to cognitive stage level. 3. Adult students at lower stages of cognitive development prefer high structure while those at higher stages prefer flexibility and diversity.
Napolitano, R. (1985). An experimental investigation of the relationships among achievement, attitude scores, and traditionally, marginally, and underprepared college students enrolled in an introductory psychology course when they are matched and mismatched with their learning style preference for the element of structure. Ed.D. dissertation, Jamaica, NY: St. John's University.	College freshman enrolled in psychology courses.	College students matched for their structure preferences with either highly or minimally structured teacher styles achieved significantly higher and had more positive attitudes than students mismatched for their preferences.
Robertson, P. F. (1977). The implications of student learning styles for prescribing reading skill development strategies for community college students. Ed.D. disseration, Florida Atlantic University.	Community college students enrolled in individual reading.	Student learning style elements of auditory, visual, teacher affiliation, numeric, qualitative, or people contact were matched with complementary reading materials and resulted in higher achievement and more positive attitudes toward their learning experience in comparison to the control group.

Table 6

Research on Learning Styles and Teacher Inservice

Researcher, Title, Institution	Population	Findings
Freeley, M. E. (1984). An investigation of the relationships among teachers' individual time preferences, inservice workshop schedules, and instructional techniques and the subsequent implementation of learning style strategies in participants' classrooms. Ed.D. dissertation, Jamaica, NY: St. John's University.	Secondary School Teachers	1. Teachers whose time preference and workshop schedule were congruent attained significantly higher post-test mean implementation scores. 2. Teachers who preferred to learn in the morning evidenced significantly higher post-test mean implementation scores when taught through an auditory rather than a kinesthetic approach. 3. Teachers who were instructed through an auditory approach in the morning workshop attained significantly higher post-test mean implementation scores than those instructed auditorily in the afternoon.
Hardy, P. S. (1979). The matching of learning environments and learning styles. Ph.D. dissertation, Berkeley, CA: University of California.	Preservice and inservice teachers	1. Preservice and inservice teachers can acquire and apply effectively the skills needed to match environments and persons. 2. Teachers are willing to make a commitment to the concept of matching. 3. Teacher ratings of student cognitive styles agreed with objective measures about 46 percent of the time.

Researcher, Title, Institution	Population	Findings
Spires, R. D. (1983). The effects of teacher inservice about learning styles on students' mathematics and reading achievement. Ph.D. dissertation, Bowling Green, OH: Bowling Green State University.	Mathematics and reading teachers in elementary schools.	1. Analysis of students' pre-test/post-test scores showed that teachers, using instructional approaches consonant with pupils' learning styles, had students who achieved significantly more in mathematics and reading than control group students. 2. Experimental students scored significantly higher on conceptual skills and rote learning subtests than control students in four out of seven grade levels.

and experimenting with the new strategies to a statistically significant higher degree.

Research on Learning Styles and Counseling

A review of the literature on the effects of using learning style approaches in counseling revealed only two experimental studies in this area. A study conducted by Marshall (1985), using Kolb's experiential learning theory in counseling adults, measured client preferences and satisfaction following the use of counseling approaches that were compatible with their learning style preferences. Another study by Griggs, Price, Kapel, and Swaine (1984), using Dunns' learning style model in counseling elementary school students, measured students' career awareness following the use of counseling approaches that were compatible with their learning style preferences.

The Kolb model (1976) used by Marshall (1985) is different from the Dunn, Dunn and Price (1985) model. Marshall used concrete versus abstract variables, which represent ways of thinking and processing information that are internal, and compared them to experiential and rational counselors. Marshall also looked at Kolb's dimensions of active and reflective learners and compared them to behavioral and client-centered counseling approaches. The model used here describes learning style in a different way, and there has been very little research to demonstrate its relationship with the unique differences that may exist between the experiential counseling approach and the behavioral counseling approach, etc. Marshall's study, described below, is interesting and well-designed, but it suggests that more research should be done in this area.

Adult counseling clients (N=205) were tested with Kolb's (1976) Learning Style Inventory to identify four preference patterns and compatible counseling approaches, as follows: (1) concrete learners--experiential counseling approach; (2) abstract learners--rational counseling approach; (3) active learners--behavioral counseling approach; and (4) reflective learners--client-centered approach. Four one-page profiles were used to illustrate the four counselor approaches, consisting of a general orientation and sample of counseling dialogue, and participants, including 75 non-client comparison college students, were asked to indicate their

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preferences for counselor approach. Separate t-tests among LSI scores means were used to test the hypothesis that preferred counselor approach is related to client learning style. Results revealed that participants did not prefer the counseling approach that matched their learning style; for instance, concrete learners did not prefer experiential counselor approaches. A post-hoc analysis revealed limited support for a matching model for the two directive approaches (rational and behavioral) in comparison to the two non-directive approaches (experiential and client-centered). Specifically, clients preferring rational or behavioral approaches for vocational concerns were more abstract learners, while clients preferring client-centered or experiential approaches were more concrete learners. Further analysis revealed that clients preferred the rational approach for personal and vocational concerns, while non-clients preferred the client-centered approach. Marshall (1985) speculated that a possible explanation for the limited support for a matching model is that the four categories represent distinctions among different learning and counseling styles that are too small to be relevant practically.

Griggs, Price, Kopel, and Swaine (1984) tested 165 sixth grade suburban students, using the Learning Style Inventory (Dunn, Dunn, & Price, 1985). The 19 students who revealed either low motivation and high structure or high motivation and low structure were randomly assigned to one of the following groups: (1) high structured counseling with three compatible students (low motivation, high structure) and two incompatible students (high motivation, low structure); (2) low structured counseling with four compatible students (high motivation, low structure) and three incompatible students (low motivation, high structure); and (3) control group with seven students. All groups met for eight sessions conducted weekly during a two-month period. The treatment objectives, to explore the world of work, were identical, but the counseling strategies and techniques differed. A one-way analysis of covariance was used to analyze the data. The independent variable had three levels: compatible, incompatible, and control; the covariate was pre-test scores; and the dependent variable was post-test scores on the Occupational List Recall Test (OLRT). The comparison of groups for the adjusted OLRT post-test was significant ($p \geq .01$). Students in the compatible group had an adjusted mean of 50.68; the incompatible group mean was 45.56; the control group mean was 38.26. Therefore, students whose learning style preferences for motivation and structure were accommodated in the counseling groups achieved significantly

higher in the area of career awareness than those whose styles were not accommodated. The findings of this study should be considered tentative, because of the small number of students.

Classroom Design

Horowitz and Otto (1973) compared the scholastic achievement of college students in a traditional classroom and a specially designed "alternative learning facility," which contained a great deal of color, movable wall panels, a complex lighting system, and flexible, comfortable seats. Grades on two term papers and a final examination showed no difference in learning between the two groups. However, there was a difference in classroom behavior. Attendance in the experimental room was better, despite the fact that the section was held at a less convenient time; students participated more during class; more students from the experimental room paid office visits to the instructor; there was more informality and group cohesion. These findings demonstrate that design can substantially affect attitudes and non-achievement behaviors, even when no impact on performance has been observed.

Feitler, Wyeiner, and Blumberg (1970) have demonstrated that there is a relationship between an individual's interpersonal needs and preference for classroom layout. Education students with high control needs liked to receive information from teachers who are clearly in a position of control, whereas subjects with low control needs selected seating where the teacher's control position was less obvious. In view of these data, it would be interesting to determine how frequently mismatches occur between classroom design and teacher personality or philosophy, and what the consequences may be for teaching style, satisfaction and effectiveness.

Much of the research dealing with classroom environments and achievement tends to group students according to one systematic type of experience, such as open classrooms or cubicles. What research fails to do is to identify which students prefer which of the types of learning and then to study the relationship between the student's preference for learning and a particular environmental design. For this reason, possible significant differences that might have resulted tend to be cancelled out because of failure to analyze differential student preferences.

Increasingly, research in the area of learning style and achievement has pointed out that there is much greater achievement if students are allowed to study in their preferred learning style modality. Counselors should be aware of this in consulting with teachers, teaching in teacher training programs, and working with students who have difficulties achieving and adapting to the traditional or open classroom situation. It seems that no single environmental design is appropriate for all students but must be varied based on individuals' preferences.

It is important to keep in mind that there is a difference between open space and open education. Open education is a philosophy about education whereby students have many resources and a variety of environmental designs in which to choose and learn based on the objectives and the assignments given by the teacher. Open space refers to a physical plant that is built without walls and has lots of open space within it. Open space may be indicative of open education but it may not. Most researchers suggest that a direct relationship between achievement and classroom design is not very apparent. However, there is a significant impact on students' general behavior, movement patterns, permissiveness, disorderliness, persistence, involvement and attitudes toward the class and other students.

A number of possible reasons exist for the contradictory findings and their frequent lack of effects. Much of the research is methodologically flawed. Independent variables are not always meaningfully operationalized and dependent variables may not be precisely defined or adequately measured. Further, relationships between any dependent and independent variables are often obscured by research design in which independent variables have vastly different types of magnitudes or are manipulated simultaneously. Not only does this approach make it impossible to determine which physical factors are related to which observed behavior, but the physical manipulations may even cancel each other out, resulting in a complete lack of observable effects. Second, general classroom behavior and attitudes may be more susceptible to environmental changes and achievements, which are presumably influenced more by factors residing within the individual. Third, when investigations are conducted in schools, the range of different kinds of designs and furniture arrangements is usually limited.

Basic Assumptions About the Physical Setting in the Classroom

1. Physical setting of the classroom is a primary element in the learning environment.
2. Students of classroom environments must take into account the social and instructional content.
3. There is no ideal physical setting that will satisfy all learning situations.
4. The physical setting of the classroom constitutes an external condition that must be arranged as systematically as the other elements of the stimulus situation.

Stires (1980) compared the test scores of two sections of a college course taught by the same instructor. Students in the choice condition selected permanent seats on the second day of class; students in the no-choice condition were seated alphabetically. In both sections, students in the middle of the room received higher grades than those at the sides of the room. The results suggest support for the environmental explanation. Studies by Millard and Stimpson (1980) and Kinarthy (1976), however, were unable to find any evidence that assigned seating position in college classrooms affected grades.

It is possible that both of these factors are related--the characteristics of individuals who happen to seat themselves in the front and center of the room and the characteristics of the environment. That is why it would be good to use the Productivity Environmental Preference Survey to look at areas related to the environment and self-selection, and their relation to achievement in the college classroom.

How this may happen is illustrated in a study by Koneya (1976) in which the participation of students previously judged to be highly or moderately verbal varies substantially according to assigned seat location: those randomly assigned to the action zone participated far more than those assigned to seats outside the area.

However, the participation of students characterized as low verbalizers did not vary according to location; in other words, even a front-center seat was unable to alter the behavior of those who were unwilling to participate. These results suggest that environmental factors are most influential when the inclination to engage in a particular behavior is already present.

Future Research

Future research is needed to isolate each of the 22 learning style variables to ascertain the effect on counseling outcomes. A number of researchers have emphasized the importance of including personal characteristics, such as learning style and personality traits, as independent variables in conducting research on the effectiveness of various counseling methods.

Rosenthal (1977) studied the effectiveness of various counselor training approaches on trainees with low versus high conceptual levels. He concluded that "comparing the results of one training method without considering trainee characteristics and learning style, as well as multiple assessment of skills, may lead to incomplete conclusions on the effectiveness of these methods" (p. 236). Similarly, Kivlighan, Hageseth, Tipton, and McGovern (1981) investigated the effects of matching treatment approaches and personality types (task-oriented versus people-oriented) in group vocational counseling. They assert that "the literature on vocational counseling is replete with research in which no differences were found between various approaches in counseling. In most of the studies in which no differences between counseling methods were found, treatments were compared without regard to relevant personality variables of participants; the researchers implicitly made the uniformity assumption" (p. 319).

Research cited previously indicates that significant improvement in academic achievement, student attitudes, and behavior results when individual learning style preferences are accommodated through complementary teaching styles, instructional approaches, or resources. Additional experimental research needs to be conducted in the area of accommodating learning style preferences through complementary counseling approaches to determine if improved counseling outcomes are achieved.

College counselors, who have limited time and resources for conducting experimental research, might utilize the case study method. Case studies could be conducted with students by the following: (1) keeping anecdotal notes and case notes on individual students, noting baseline data in behavioral areas such as academic achievement, withdrawal from courses, and attitudes toward college; (2) counseling students over a period of time, using counseling interventions which are compatible with their individual learning style preferences; and (3) assessing

post-counseling behavioral changes and comparing these changes with the baseline data.

We do not have longitudinal research at this point to address the issue as to why changes occur across grade levels. The changes may be related to maturation or adaptation to instructional methodologies. Adaptation would indicate that individuals who are able to be flexible and adapt to learning environments are able to persist even when the educational system is not designed to meet individual learning style preference differences. Individuals that are not able to be flexible in moving from tactile and kinesthetic to visual and auditory learning may be the students who drop out or are dissatisfied when they move into the upper grades. Additional research needs to be done in this area to determine why changes in learning style occur across grades.

There are several issues that suggest questions for research. One such question involves the matching of teaching style and learning style. This would include both the way the student prefers to learn and how the teacher prefers to teach. How the teacher prefers to teach may be related to how the teacher analyzes and synthesizes information. The teacher's cognitive style may interact with how the student prefers to learn and how the student analyzes and synthesizes information. Will the student's learning be the greatest when there is a match or when there is dissonance between teacher and student learning style and/or teacher and student cognitive style?

Research is needed in the area of brain functioning and the interaction of brain functioning and learning style. At this point, there is very little definitive research relating hemispheric dominance to actual learning. What seems to be suggested is a great deal of variation among individuals in terms of information processing and brain organization (Levy, 1982). Research stresses the importance of observing how individuals take in and process information.

There are several issues related to maturation and adaptation. Maturation would suggest that learning styles may change because of a person's development. However, we do not know whether preferences related to how one learns change because of the changes in the individual, the person's ability to adapt to different types of instruction, or an interaction of the two. It is possible that individuals who are bright and flexible are more able to persist in existing methods of instruction, and that individuals who are not flexible are those who have difficulty adapting and

may eventually drop out of school. It would be helpful to determine how changes in instruction relate to student's learning style and influence the student's ability to understand information.

SUMMARY

This monograph has attempted to provide an overview of the elements of learning style and discuss the increasing need for counselors to be aware of how the learning style model can be utilized in counseling. We have included various strategies and techniques that are appropriate for individual and group counseling. In addition, we have discussed several strategies that can be utilized in implementing the learning style approach. These include such things as training peer helpers and education majors, learning effective communication skills, examining college programs that use learning style approaches, looking at personality type and residence hall programs, and conducting study skills workshops. We have also pointed out some of the research that has been done with college students and have suggested guidelines in selecting learning style instruments for conducting research, as well as approaches that can be used for utilizing learning styles in research. We believe this monograph will serve as a guide for helping counselors and counselor educators become more aware of learning style and how it can be implemented from the counseling perspective.

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